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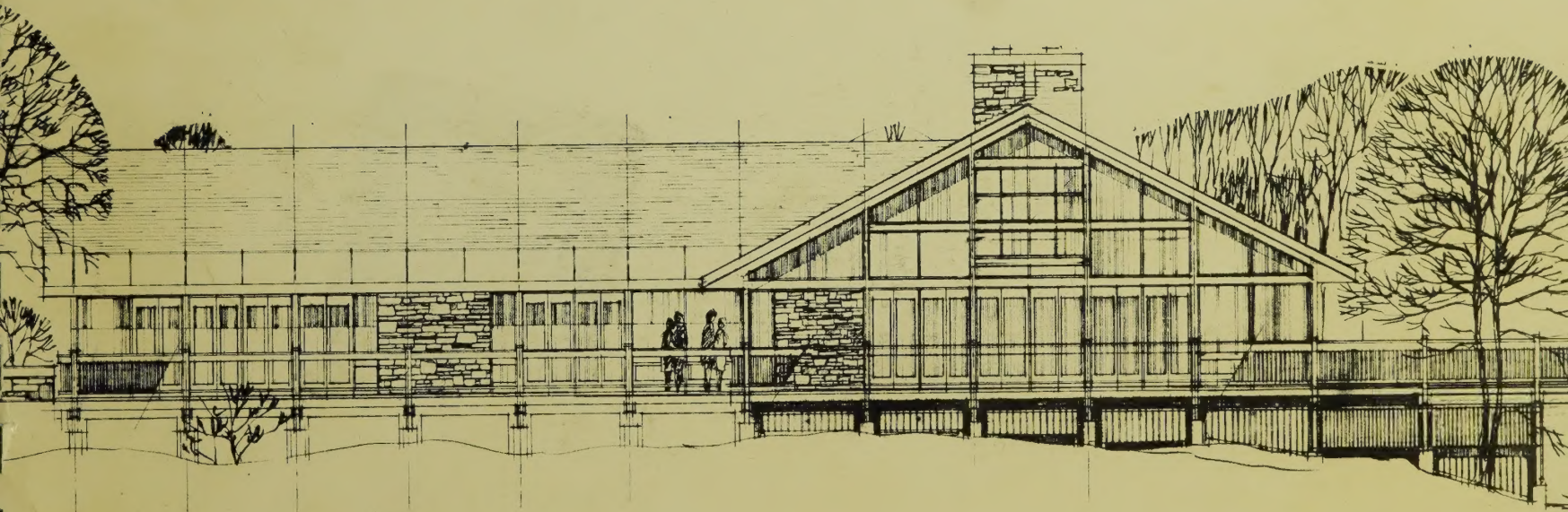
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Hamilton Region Conservation Authority

Christie Conservation Area

# Master Plan



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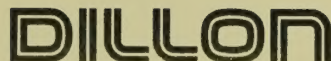
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26 July 1988

Hamilton Region Conservation Authority  
P.O. Box 7099  
838 Mineral Springs Road  
Ancaster, Ontario  
L9G 3L3

Attention: Mr. R. Chrystian,  
Director of Planning

Christie and Valens Master Plans

Dear Sirs:

We are pleased to submit 30 copies of each of the Christie Conservation Area Master Plan, the Valens Conservation Area Master Plan and the Master Plan Appendices.

We have enjoyed working on this challenging study and look forward to implementation of the Plans.

Yours truly,

M.M. DILLON LIMITED

James R. Balfour, P.Eng., MCIP  
Project Manager

/ch  
Encl.





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## SUMMARY OF RECOMMENDATIONS

The Master Plan for Christie Conservation Area builds on the traditional recreational activities of the site to provide visitors with a broader range of recreational experiences. Picnicking, fishing, boating, hiking, and nature education remain key activities but specific site and facility improvements are recommended.

Swimming facilities will be upgraded by adding a children's splash pool. Renovations are proposed to the beach pavilion, providing an outdoor terrace at the snack bar and skylights to brighten interior spaces and the picnic shelter. This facility will become a meeting, gathering and socializing focus for the beach area.

A Lodge is proposed on the south side of the reservoir in a wooded setting. Used for a cafe, lounge, interpretive displays, meetings and seminars, this facility will become a focus for spring, fall and winter activities. Associated outdoor uses include woodland skating, snow slides, trails and outdoor play areas.

A horseback riding facility, to be operated on a concession basis, is proposed, with trails on the south side of the reservoir.

The area west of Town Line Road will remain a "Natural Zone" devoted to nature interpretation, wilderness camping and hiking.





An extensive system of trails and boardwalks is proposed throughout the site.

The internal site road system has been redesigned to help reduce walking distances and to create a more continuous park drive. The entrance drive is a sweeping tree lined circular road that passes by the beach pavilion at a drop off before reaching parking lots. The road extends around the perimeter of the east picnic area and through to the west across the causeway to the south side of the reservoir terminating at the Lodge.

The Master Plan will not interfere with current wildlife management directives. Existing areas of natural vegetation and fencerows are preserved. Selective cutting is proposed in the hardwood forest for construction of the Lodge. The pine plantations will be selectively thinned and managed to encourage natural succession.

Development proposed in the Master Plan will also not affect the implementation of fisheries recommendations. The weir recommended in the Wildlife Management Plan has been incorporated into the Master Plan.

The preliminary capital cost for development is approximately \$6.5 million. Development will be phased over at least 5 years.

The expansion of existing development proposed in this Master Plan update is not considered significant. It is, therefore, not considered to be subject to the Environmental Assessment Act.



Development proposed in the Master Plan is considered compatible with local and regional land use designations. Being within a designated Environmentally Sensitive Area, any impacts on the natural environment from development will be avoided or mitigated. The site is also within the jurisdiction of the Niagara Escarpment Plan. Certain classes of development are exempt under existing Development Control Regulations. An exemption to development control, as it applies to implementation of the Master Plan, may be obtained through an amendment to Ontario Regulation 685/80.





## 1. INTRODUCTION

### 1.1 Study Area

The Christie Conservation Area, owned and operated by the Hamilton Region Conservation Authority, is a 341 ha site located west of the Town of Dundas, at the junction of Highways 5 and 8 (Figure 1).

The site was purchased by the Authority in the late 1960's for the construction of a reservoir for stream flow augmentation, flood control, water supply and recreation. The multi-use of this site for conservation, resource management and recreation has been encouraged since it opened to the public in the early 1970's.

### 1.2 Study Purpose

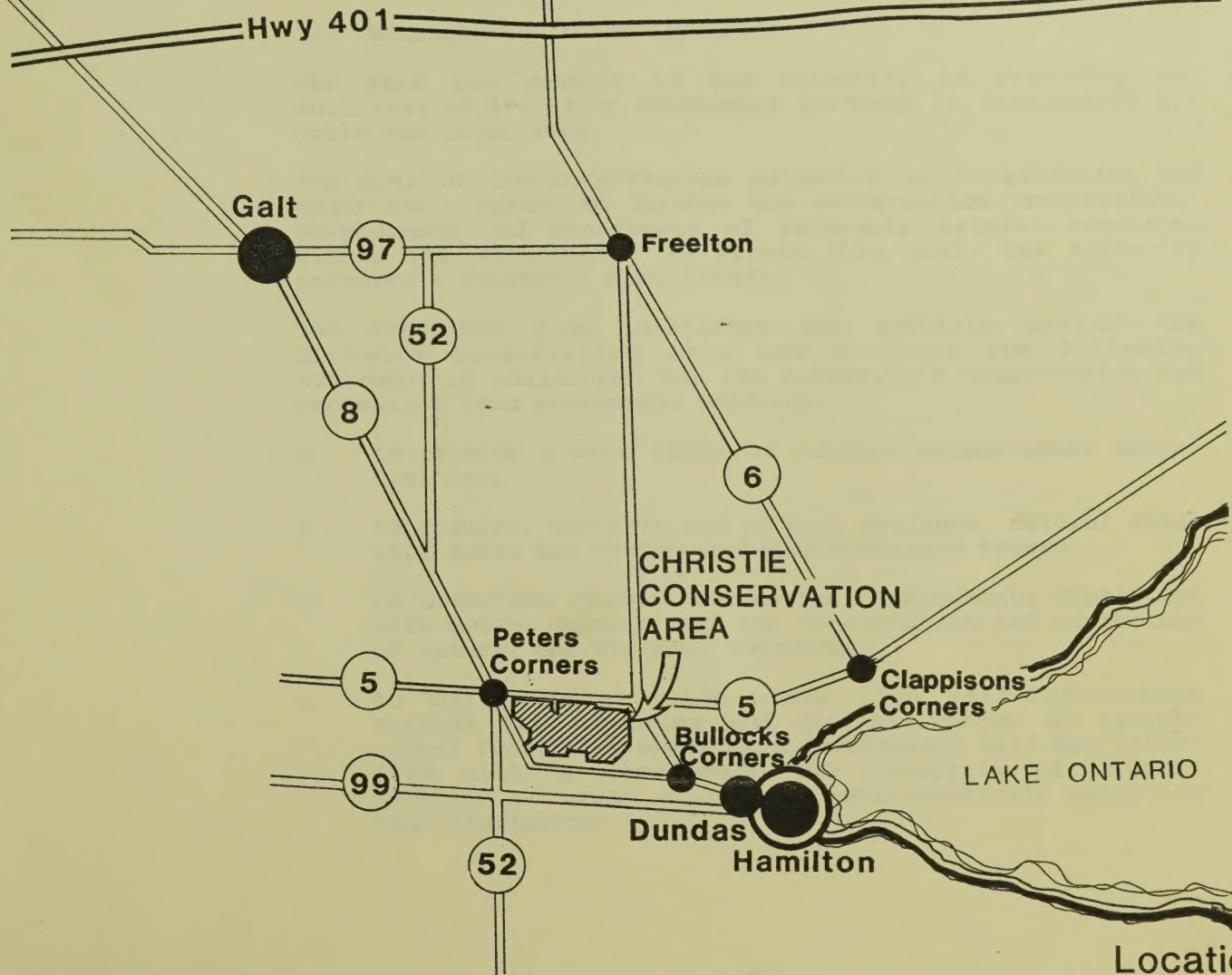
In 1985, the Authority reviewed its attendance figures for the 1974 to 1985 period. While attendance figures at Christie increased annually, operating costs still exceeded revenues. This was particularly evident since the introduction of market value assessment.

The Authority is committed to a 'user pay' philosophy and follows a management strategy whereby all revenue producing areas are operated on a break even or profit making basis.

The planning directives for Christie were, therefore, re-evaluated with the intent of developing a new Master Plan geared towards attracting greater numbers of visitors and potentially operating at a profit, while enhancing the existing character of the Conservation Area.

Specific Master Plan objectives are included in the Terms of Reference for the Study (Appendix 1).





N.T.S.

Location Map

Figure 1

CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY





### 1.3 Conservation Authority Goals

The role and mandate of the Authority in providing for multi-use of its water management holdings is directed by its goals and objectives.

The goal of the Conservation Authority is to establish and undertake programs to further the conservation, restoration, development and management of renewable natural resources within its watershed. To attain this goal, the Authority prepared a Watershed Plan (1983).

The Watershed Plan identifies the multiple use of the Christie Conservation Area and contains the following statement of philosophy for the Authority's conservation and recreation land management holdings:

- o to provide a wide range of outdoor recreational opportunities;
- o to acquire, conserve and protect wetlands, natural wildlife areas and Environmentally Sensitive Areas;
- o to undertake outdoor recreation developments consistent with market demands and the conservation and protection of natural and historic resources;
- o to bring conservation areas into self-sufficiency through the expansion and diversification of recreational facilities where such development will not interfere with or compromise the integrity of natural habitats or areas exhibiting environmentally sensitive characteristics;





- o to contribute to the tourism potential of the Hamilton-Wentworth Region;
- o to cooperate and collaborate with the private sector... to expand the range of recreational opportunities;
- o to negotiate mandates with other public agencies to assume management and/or development responsibilities.

#### 1.4 Goals of the Christie Conservation Area Master Plan

The goals directing this Master Plan were based on those contained in the 1980 Conservation Area Master Plan:

- o to manage the water resources in a manner that will enhance natural habitats and recreation potential of the land base;
- o to conserve, manage and enhance natural habitats;
- o to provide land and water-based recreation opportunities consistent with management of water resources and without compromising natural habitats;
- o to provide information, education, interpretation opportunities for visitors in relation to the facilities and natural resources.

These goals were expanded to reflect the purpose and intent of the present Master Plan update by adding:

- o to balance revenue with operating costs.



### 1.5 Study Team

The preparation of the Master Plan was directed by a seven member Technical Committee representing the:

- o Hamilton Region Conservation Authority
- o Town of Flamborough
- o Niagara Escarpment Commission
- o Ministry of Natural Resources
- o Ministry of Tourism and Recreation

M.M. Dillon Limited prepared the Master Plan. Their subconsultants, Stevenson Kellogg Ernst & Whinney Management Consultants (formerly Thorne, Stevenson and Kellogg), were responsible for the market, economic and financial analysis.





## 2. STUDY PARTICIPATION

The participation of agencies, individuals and the public was an important component of this study. In September 1986, notification of project start-up and requests for comments were sent to several government agencies, neighbourhood associations, interest groups and local tourist-related business operators. The list of agencies and groups is included in Appendix 2.

Interviews were held with several interest groups to obtain information on needs and preferences for the Conservation Area. Appendix 2 contains a summary of interviews.

Two public open houses were held at the Beverly Community Centre in Rockton. Public notification of the open houses was made through the local newspaper and radio and by direct mail to approximately 100 households.

The first public open house was held on 18 September 1986. The purpose of the open house was to:

- o obtain suggestions for future use;
- o discuss concerns about existing and possible uses; and
- o outline the study objectives and schedule.

A total of 19 people attended.

The purpose of the second open house held on 26 March 1987, was to present the concepts, and the preferred plans and sketches. A total of 44 people attended and 11 written submissions were made. An Authority staff report on comments received at the meeting is included in Appendix 2.



The Full Authority and members of the Conservation Areas Advisory Board were kept informed of the study progress. The following meetings were held with the Authority's Conservation Areas Advisory Board:

- 23 October 1986
- 25 November 1986
- 19 February 1987
- 29 April 1987

A tour of the site was held for members of the Conservation Area's Advisory Board and Full Authority on 16 April 1987.

A final presentation was made to both the Conservation Areas Advisory Board and Full Authority on 29 April 1987, leading to adoption of the Master Plan (7 May 1987).





### 3. METHOD

Figure 2 depicts the method used to complete the Master Plan. There were five major phases in the Study:

- o inventory and analysis;
- o identification of development components;
- o alternative concepts;
- o concept evaluation; and
- o preferred concept.

During the inventory and analysis phase, data was assembled on:

- o biophysical, heritage and scenic resources;
- o existing site facilities and uses;
- o market conditions; and
- o policies.

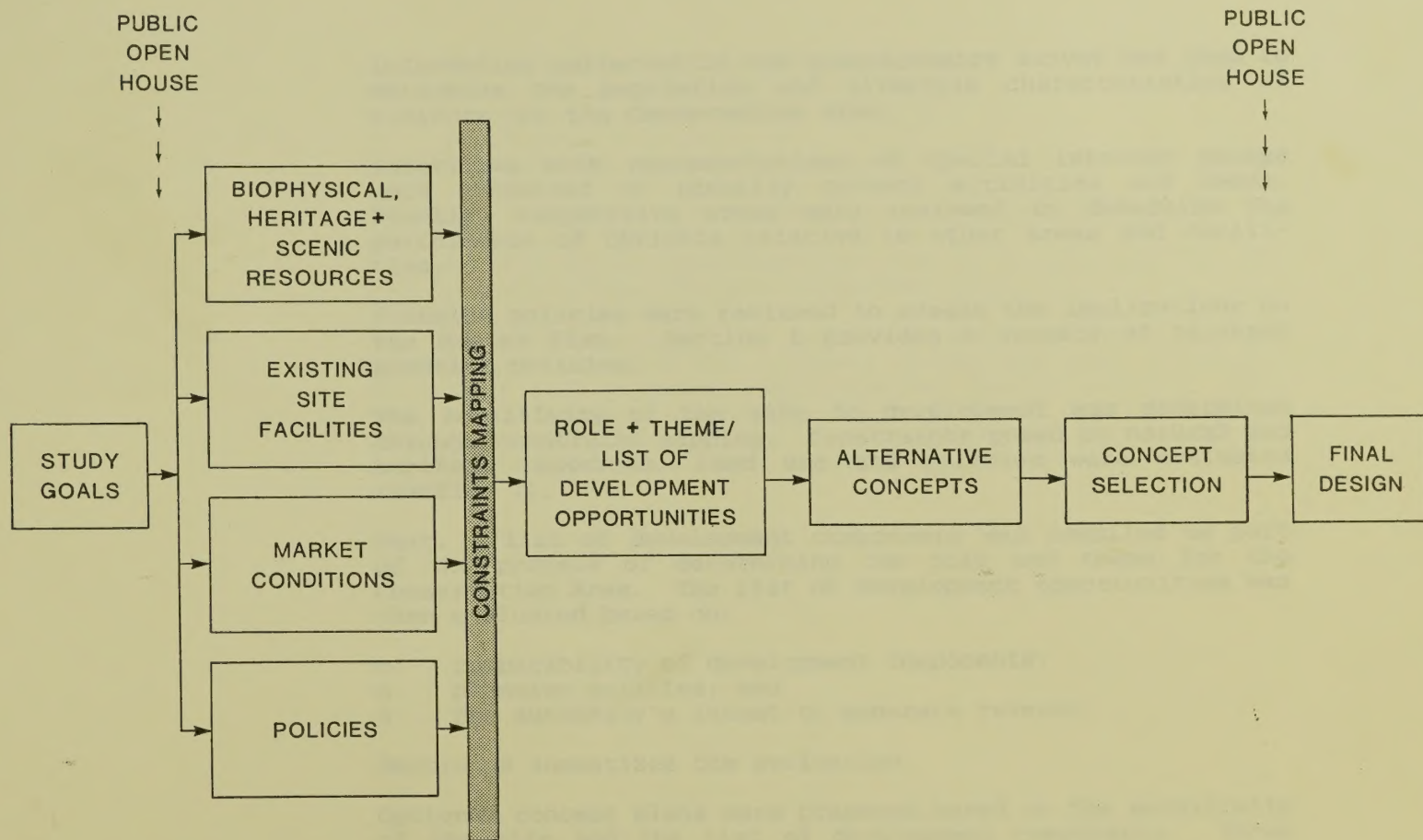
The Authority has an extensive data base on the site's resources and facilities. Information was, therefore, collected from existing sources, supplemented with field work where necessary. Section 4 summarizes existing site conditions.

Market conditions (Section 5) were examined using the following sources:

- o demographic analysis of visitors to Hamilton-Wentworth;
- o questionnaire survey of visitors (fall 1986);
- o interviews with special interest groups; and
- o profiles of competitive areas.

A demographic analysis of visitors to Hamilton Wentworth was completed to characterize the typical visitor to the Region.





## Summary of Methodology

Figure 2





Information collected in the questionnaire survey was used to determine the population and lifestyle characteristics of visitors to the Conservation Area.

Interviews with representatives of special interest groups were conducted to identify current activities and needs. Finally, competitive areas were reviewed to determine the performance of Christie relative to other areas and facilities.

Planning policies were reviewed to assess the implications on the Master Plan. Section 6 provides a summary of relevant planning policies.

The sensitivity of the site to development was determined through constraint mapping. Constraints posed by natural and heritage resources, land use and policies were evaluated (Section 7).

Next, a list of development components was compiled as part of the process of determining the role and theme for the Conservation Area. The list of development opportunities was then evaluated based on:

- o compatibility of development components;
- o planning policies; and
- o the authority's intent to generate revenue.

Section 8 summarizes the evaluation.

Optional concept plans were prepared based on the sensitivity of the site and the list of development components. Three programs of facilities and activities were identified. The concept plans were then evaluated based on a number of factors:

- o user appeal;
- o spectator appeal;



- o integration with existing facilities;
- o potential for year round use;
- o compatibility with site character;
- o environmental impact; and
- o potential to generate revenue.

Section 9 documents the optional concept plans considered.

Section 10 outlines proposed park zoning in relation to the requirements of the Niagara Escarpment Plan.

The preferred concept was selected and developed as the Master Plan (Section 11). Design guidelines were developed to direct site planning and detailed design (Section 12). Financial analyses of three concepts for a proposed lodge were completed (Section 13). Capital costs were estimated and an implementation schedule was prepared (Section 14 and 15).





#### 4. EXISTING SITE CONDITIONS

##### 4.1 Biophysical Resources

Limestone outcroppings of the Niagara Escarpment are confined to the hillsides south of the reservoir and to areas of the reservoir bottom. All are locally distributed and overgrown with trees and shrubs. The original forest communities of the Area are located along the south side of the reservoir and more locally along spring-fed swales draining into Spencer Creek from the north. The remaining upland area consists of old fields and hedgerows which are now either manicured for picnicking or have been planted with pines. There is a pine plantation south of the reservoir.

Pockets of native maple and pine are also located along Spencer Creek upstream from the Town Line Road.

Because of the high proportion of runoff from agricultural lands, the reservoir is highly eutrophic and hence is prone to algae blooms. During periods of high water (spring to fall) marsh vegetation develops along the reservoir's shoreline upstream from the causeway.

The spring-fed ponds located along creeks which flow into the reservoir from the north maintain better water quality, and hence provide better habitat for trout, which are stocked annually for recreational fishing.

The Christie Conservation Area is designated as an Environmentally Sensitive Area (ESA) in the Region of Hamilton-Wentworth and Town of Flamborough Official Plans. The property fulfills three criteria for establishing ESA's.



- o The plant and/or animal communities of the area are identified as unusual or of high quality locally within the municipality, Ontario or Canada.
  - . the reservoir and creek provide habitat for Northern Redbelley Dace, Mirror Carp, Common Shiner, Flathead Minnow, Blacknose Dace, Creek Chub, White Sucker and Northern Hog Sucker. Some interesting indicator species include River Chub, Longnose Dace, Redside Dace, Smallmouth Bass and Largemouth Bass.
- o Habitat for Regionally, Provincially or Nationally rare or endangered species.
  - . at least one very rare sweet Chestnut tree is located on site (near Pond #4).
- o Location of area, combined with its natural features, make it suitable for scientific research and conservation education.
  - . proximity of the Conservation Area to urban areas and, therefore public and high schools make it a suitable location for educationally oriented field trips.

The 1980 Master Plan for the Conservation Area contains a detailed inventory of the site's biophysical resources.

#### 4.2 Existing Facilities

The main architectural features of the site are summarized as follows:

##### a) Entrance

The gatehouse and entry into the area are located off Highway 5. Existing facilities include the headquarters





for park administration and maintenance. The superintendent's residence, located in the entrance area, is not accessible for public use.

b) Beach House

The Beach House functions as a food concession, change house, washroom and picnic pavilion for the beach area. The adjacent shoreline of the reservoir offers 375 m of sand beach fronting on a chlorinated swimming area separated from the main body of the reservoir by a submerged curtain. The beach and adjacent picnic areas are served by two parking lots for 1520 vehicles.

c) Boat Rental

A combined boat rental area and launch ramp on the north side of the reservoir offer the only boat access to the lake. A parking lot for 89 vehicles is located to the northeast. The boat rental building has a food concession and washrooms, and is used for cross country ski rental during the winter months.

d) Outdoor Education Centre

Located off Cramer Road inside the east boundary of the Conservation Area, three portable trailers provide an education centre for students. The Centre is owned and operated by the Hamilton Board of Education. Educational hikes are taken throughout the area and especially to the wildlife management area west of the Town Line road.

e) Darnley Mill

The stabilized ruins of the paper mill are located on the Spencer Creek at Crooks Hollow Road crossing, downstream of the Christie dam.



f) Saw Mill

Located north of the reservoir, this facility is used periodically as a demonstration tool and to cut firewood.

#### 4.3 Vehicle Circulation

The road system of the site can be typified as a "T"-circulation with one main entrance located off Highway 5. The entrance road terminates in a junction near the reservoir at which point motorists are directed west to the main beach area parking lot or east to the fishing ponds and boat rental area.

In anticipation of development and use of the area south of the reservoir, the road system was extended via a causeway. Currently, the road ends on the south side serving limited purpose without the anticipated development. Vehicle access to the causeway is controlled by a gate.

There is no interior road access to the Darnley Mill ruin, the outdoor education centre or the wildlife management area west of the Town Line Road.

#### 4.4 Activities and Events

Christie Conservation Area has continued its promotional campaign directed at passive and moderately active recreation. Recreational opportunities include:

- o picnicking;
- o swimming;
- o hiking;
- o fishing;
- o non-motorized boating and canoeing;





- o playing (for children at special play areas);
- o cross-country skiing;
- o snowshoeing;
- o tobogganning; and
- o skating.

Events currently held at the Christie Conservation Area include:

- o Christie Do-fest
- o Rendevous of the Four Winds (recreation in pioneer days);
- o Float Fly (model boats)
- o Antique Horse Drawn Carriage Driving Competition
- o Water Safety Lessons
- o Canoeing Lessons

#### 4.5 Design Considerations

The combination of topography, vegetation and water give the Christie Conservation Area a strong image and identity. Its full potential can only be realized if the facilities and circulation respect and enhance these characteristics.

The following are some of the weaknesses in the present design and development of the site:

- a) There is a weak sense of arrival and introduction to the site. The boulevard planting and gatehouse are strong entrance features. The roadway between the gatehouse and the dominant architectural feature of the site - the beach house - is visually weak. It does not serve to connect the two points; nor does it provide a natural unfolding of circulation and facilities beyond the gatehouse.



- b) Lack of a continuous roadway, or other transportation system, to connect all major features of the area. For example, Darnley Mill, the dam and the wilderness area, cannot be reached by road from within the site.
- c) Lack of a strong focus to attract visitors to the south side of the reservoir.
- d) Lack of facilities to encourage winter recreation.
- e) The existing beach house is not directly accessible by car. As the main architectural feature of the site, it should be oriented to circulation, drop-off areas and parking areas.
- f) At present, when visitors are finished "recreating", they are forced to seek facilities outside the area for quality lounging, eating and generally unwinding from the day's activities. Such a facility located within the Conservation Area, may lengthen the stay of the user; it would also offer an opportunity to expand the appeal to users outside traditional recreation. Its location near Dundas, Ancaster and Hamilton, make the Conservation Area a potential destination for people seeking comfortable dining and lounge facilities in a natural setting.
- g) Visitors complain about the walking distances between parking lots and facilities.
- h) While water quality inside the swimming area meets the standard for body contact, visitors complain about the appearance of the water because of a high content of suspended sediment.

These design considerations will be addressed in the Master Plan.





## 5. MARKET CONDITIONS

This section summarizes the market research describing:

- o the demand for recreation activities and facilities in the Hamilton-Wentworth region;
- o profile of the current market for the Christie Conservation Area; and
- o facilities competing with the Christie Conservation Area.

This analysis provides background information for planning the Conservation Area.

### 5.1 Method

Descriptive information was collected from a variety of sources including:

- o an on-site questionnaire survey of Christie visitors;
- o interviews with special interest groups using the area (Appendix 2);
- o interviews with key individuals in public and private recreation and tourism operations, including other conservation authorities (Appendix 2); and
- o data, such as national census, provincial recreation and tourism studies, and independent business analysis.



## 5.2 Existing Use

In this section statistical data on the size and profile of Christie's existing market is presented. Profiles of competing facilities are also provided.

### 5.2.1 Current Attendance

Over 126,000 visitors came to the Christie Conservation Area in 1985. That attendance was 20% higher than the average annual attendance for all HRCA parks and over 50% higher than the overall average annual attendance at conservation areas in Halton, Hamilton, Metropolitan Toronto and Niagara regions as shown in Table 1.

Table 1: Attendance at Conservation Areas

| <u>Conservation Authority</u> | <u>Annual Attendance</u> | <u>Number of Conservation Areas</u> | <u>Average Number of Visitors/area</u> |
|-------------------------------|--------------------------|-------------------------------------|----------------------------------------|
| Halton                        | 424,778                  | 5                                   | 84,956                                 |
| Hamilton                      | 740,500                  | 7                                   | 105,786                                |
| Metro Toronto                 | 847,316                  | 12                                  | 70,610                                 |
| Niagara                       | 265,050                  | 4                                   | 66,262                                 |

Over 83.5% of all visitors stay in the Hamilton-Wentworth region for less than three days (Table 2). On average, one in every 8.5 visitors is a new visitor and approximately 17% of these visitors reported they are likely to return within the next two years.





Table 2: Average Length of Stay in  
the Hamilton-Wentworth Region

|               | <u>%</u> | <u>Total %</u> |
|---------------|----------|----------------|
| 1 day or less | 72.1     | 72.1           |
| 2 - 3 days    | 11.4     | 83.5           |
| 4 - 7 days    | 3.4      | 86.9           |
| 8 - 14 days   | 1.6      | 88.5           |
| Over 2 weeks  | 11.5     | 100.0          |

### 5.2.2 Visitation Pattern

Over 88% of respondents have previously been to the Conservation Area. More importantly, more than one-third of the visitors come to Christie more than four times each season.

Table 3: Visitation Patterns

|                   | <u>%</u> | <u>Total %</u> |
|-------------------|----------|----------------|
| More than 4 times | 33.6     | 33.6           |
| More than 2 times | 18.5     | 52.1           |
| Once this season  | 24.1     | 76.2           |
| Once in 2 years   | 4.0      | 80.2           |
| Only once before  | 8.0      | 88.2           |
| Never before      | 11.7     | 99.9*          |

\* less than 100% because of rounding

### 5.2.3 Group Size

A visit to Christie is not, for the most part, a solitary experience. Only 5.6% of respondents indicated visiting the



area alone. The majority of visitors experienced the site with their families or as part of a group.

Table 4: Group Size

|                       | <u>%</u> | <u>Total %</u> |
|-----------------------|----------|----------------|
| Alone                 | 5.6      | 5.6            |
| With one other person | 16.5     | 22.1           |
| With two or more      | 11.6     | 33.7           |
| With family           | 53.9     | 87.6           |
| As part of group      | 12.4     | 100.0          |

#### 5.2.4 Age Profile

Christie appeals to people in their 20's and 30's. Almost two-thirds of the visitors were in this age group.

Table 5: Age Profile

|             | <u>%</u> | <u>Total %</u> |
|-------------|----------|----------------|
| Under 15    | 3.2      | 3.2            |
| 15 to 20    | 8.9      | 12.1           |
| 21 to 25    | 13.1     | 25.2           |
| 26 to 30    | 18.2     | 43.4           |
| 31 to 39    | 31.9     | 75.3           |
| 40 to 49    | 12.5     | 87.8           |
| 50 to 59    | 5.8      | 93.6           |
| 60 to 69    | 3.2      | 96.8           |
| 70 and over | 3.2      | 100.0          |





#### 5.2.5 Income Profiles

The Conservation Area tends to attract families with middle to upper incomes. Thirty five percent of the respondents to the survey reported household incomes over \$40,000 per year. Overall, 54.5% reported household incomes of \$30,000 or more.

Table 6: Household Income

|                      | <u>%</u> | <u>Total %</u> |
|----------------------|----------|----------------|
| under \$12,000       | 12.0     | 12.0           |
| \$12,000 to \$14,999 | 2.8      | 14.8           |
| \$15,000 to \$19,999 | 6.4      | 21.2           |
| \$20,000 to \$24,999 | 11.2     | 33.4           |
| \$25,000 to \$29,999 | 13.1     | 46.5           |
| \$30,000 to \$39,999 | 19.5     | 66.0           |
| \$40,000 to \$49,999 | 13.9     | 79.9           |
| \$50,000 and over    | 21.1     | 100.0          |

#### 5.2.6 Purpose of Visit

Almost half of the visitors to Christie (48.6%) cited family/outing and picnicking as the main purpose of their visit. Participating in water sports (21%) and enjoying scenery and nature (12%) were also primary reasons for visiting the site.



Table 7: Reason for Visiting

|                    | <u>%</u> | <u>Total %</u> |
|--------------------|----------|----------------|
| Scenery and Nature | 12.0     | 12.0           |
| Water Sports       | 21.0     | 33.0           |
| Fishing            | 7.4      | 40.4           |
| Camping            | 0.3      | 40.7           |
| Picnic             | 21.7     | 62.4           |
| Family Outing      | 26.9     | 89.3           |
| Organized Activity | 5.3      | 94.6           |
| Educational        | 1.2      | 95.8           |
| Other              | 4.1      | 99.9*          |

\* less than 100% because of rounding

#### 5.2.7 Changes

Over half of the visitors (58.3%) felt that changes should be made to the park. Improvements to the swimming area and the addition of attractions and facilities were most frequently suggested by the respondents.

Special interest groups provided a wide range of input on their needs. Generally, these groups wanted facilities for social and/or educational events.

Respondents were asked to state their likes and dislikes of Christie. The main reasons that the area is liked are:

- o clean/fresh air;
- o swimming/beach;
- o scenery and nature; and
- o abundance of space.





Interestingly, the swimming and beach area was also mentioned as the most disliked aspect of the site. Another common complaint centered on the distances between the restrooms.

### 5.3 Competing Facilities

#### 5.3.1 Recreation Facilities

Parks are the most popular recreational sites in Hamilton-Wentworth. Active parks may provide 33.3% of all recreation opportunities. Passive parks may provide a further 42.9%. Table 8 is an inventory of private and public recreation facilities in Hamilton-Wentworth region. Appendix 3 includes a list of all facilities.

Table 8: Recreation Facilities in Hamilton-Wentworth

| <u>Type of Facility</u> | <u>Number</u> |
|-------------------------|---------------|
| Recreation Centres      | 52            |
| Parks - Active          | 98            |
| - Passive               | 67            |
| Curling Clubs           | 5             |
| Golf Clubs              | 28            |
| Tennis Facilities       | 43            |
| Pools - Indoor          | 16            |
| - Outdoor               | 12            |
| Arenas                  | 19            |
| Athletic Clubs          | 24            |
| Amusement Parks         | 12            |

Many visitors to the Christie and Valens Conservation Areas have also visited the Royal Botanical Gardens. According to our questionnaire, patrons have visited:



- o Royal Botanical Gardens (32.1% of replies);
- o Confederation Park (28.5%);
- o African Lion Safari (22.1%);
- o Dundurn Castle (13.1%);
- o Hamilton Art Gallery (7.7%); and
- o Canadian Football Hall of Fame (1.3%).

These attractions might provide excellent promotional locations. Other combined efforts, such as package promotions and joint marketing, could be used to increase attendance and reduce promotional costs.

The percentage of Christie patrons who visited Valens Conservation Area in the past season was 12.9%. Also, 12.9% of Christie visitors had also visited Confederation Park. The popularity of these other areas suggests that cross-selling efforts should be intensified.

The strongest competitors to Christie are private facilities. Over 35% of the respondents stated that they have also visited private parks and campgrounds in the current season. Of course, this figure does not include those people who have never visited Christie. The Conservation Area must compete with private sites offering similar recreation experiences. Upgrading and new facilities will be required to remain competitive.

#### 5.4 Potential Market

The survey of Christie visitors revealed the market has a number of segments. For purposes of analysis, the resident segment and the tourist segments are most important.





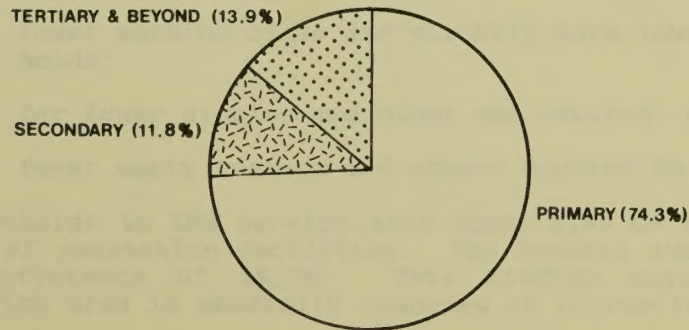
#### 5.4.1 The Resident Segment

More than 86% of visitors to Christie live within a 115 km radius, which is a region within a population of 5,178,000. Realistically, however, only a portion of this market can be expected to visit the Conservation Area.

The population of the primary segment is 791,000. The estimated accessible population is 587,700 since 74.3% of the visitors to Christie reside in Hamilton-Wentworth. Figure 3 shows the accessible market.

The local market, or service area, can be divided into three segments: primary (within a 32 km radius); secondary (from 33-65 km radius); and tertiary (from 66 to 115 km radius). Proximity effects visitation to Christie. Residents closest to the Conservation Area are more likely to be attracted to it. At present, nearly three-quarters of the visitors to Christie reside in the primary segment.

Figure 3: Christie Visitors - Accessible Market





Overall, the service area is characterized by:

- o more affluent, upscale and middle and upper class households;
- o fewer working class households but more lower class households, empty nesters and older and retired couples; and
- o greater ethnic mix.

The primary segment is characterized by:

- o fewer affluent households;
- o more middle class households;
- o more working and lower class households;
- o fewer singles, more young couples;
- o considerably more empty nesters; and
- o lesser ethnic mix.

The secondary segment is characterized by:

- o more affluent, upscale and middle and upper class households;
- o fewer working class and slightly more lower class households;
- o far fewer singles and older and retired; and
- o fewer empty nesters and ethnic households.

Households in the service area spent \$190 on average for the use of recreation facilities. The Ontario average is \$150 - a difference of 26.7%. This finding suggests that the service area is generally composed of recreationally involved





people. In other words, the target market tends to prefer physically active pursuits e.g. bicycling, swimming, jogging, etc:

#### 5.4.2 Population Projections

Demands upon conservation areas generally may continue to escalate as South-Central Ontario's population grows. The urban expansion of Hamilton and the population growth in the Halton, Peel and Waterloo regions are likely to be particularly important forces in the future. Table 9 identifies the potential impact of these trends.

Table 9: Forecast of 10 Year Population Growth

| <u>Region</u>      | <u>Population<br/>1986<br/>(000's)</u> | <u>Forecast<br/>Increase<br/>%</u> | <u>Forecast<br/>Population<br/>%</u> |
|--------------------|----------------------------------------|------------------------------------|--------------------------------------|
| Hamilton-Wentworth | 430.2                                  | 5.1                                | 452.1                                |
| Halton             | 273.8                                  | 19.8                               | 328.0                                |
| Waterloo           | 325.8                                  | 12.7                               | 367.2                                |
| Peel               | 641.2                                  | 70.6                               | 1,093.9                              |
| Metro Toronto      | 2,228.1                                | 4.9                                | 2,337.3                              |
| Niagara            | <u>373.6</u>                           | 2.2                                | <u>381.8</u>                         |
|                    | <u>4,272.7</u>                         |                                    | <u>4,960.3</u>                       |

Source: The Financial Post Information Service.

#### 5.4.3 The Tourist Market

The tourist market in Hamilton-Wentworth in 1985 was made up of approximately 2,370,000 visitors, according to the



regional tourism report. This group can be broken down as follows:

- o 1,480,000 day-trips made to Hamilton-Wentworth by Ontario residents;
- o 180,000 overnight-trips made to Hamilton-Wentworth by Ontario residents;
- o 80,000 enroute stops made by non-Ontarians;
- o 630,000 overnight trips made to Hamilton-Wentworth by non-Ontarian visitors.

Attractions and special events are the main reasons why visitors come to Hamilton-Wentworth. Most are same-day visitors, travelling from within an 80 km distance. The most popular attractions are noted in Table 10.

Table 10: Visitor Attendance at Attractions\*

| <u>Attraction</u>         | <u>Number of Non-Residents</u> |
|---------------------------|--------------------------------|
| Royal Botannical Gardens  | 600,000                        |
| African Lion Safari       | 400,000                        |
| Copps Coliseum            | 280,000                        |
| Hamilton Place            | 105,000                        |
| Confederation Park        | 37,500                         |
| Hamilton Convention Cente | <u>11,950</u>                  |
| Total                     | <u>1,434,450</u>               |

\* Visitor attendance for Flamborough Downs was not available.





There is a marked similarity between the destinations of non-resident visitors and those of residents. This similarity suggests further opportunities for joint promotions of the Conservation Area and other attractions.

#### 5.4.4 Christie Visitors Match Non-Resident Profile

The description of a typical visitor to Hamilton-Wentworth matches that for a Christie visitor. In general characteristics, the tourist is:

- o male;
- o married;
- o between 25 and 44;
- o annual income between \$25,000 and \$34,999; and
- o a white-collar worker.

According to the regional tourism strategy, growth in the tourism market may increase by 29% in the next few years. Assuming that 44% of tourists will be first time visitors and that 85% of tourists will be repeat visitors, the Hamilton-Wentworth region might welcome over three million visitors over the next few years.

#### 5.4.5 Market Penetration

Penetration of the market in the entire service area by Christie Conservation Area is shown in Table 11.



Table 11: Origin of Visitors and Market Penetration

| <u>Resident Market</u> | <u>1986<br/>(000's)</u> | <u>%<br/>Attendance</u> | <u>Penetration<br/>%</u> |
|------------------------|-------------------------|-------------------------|--------------------------|
| Hamilton-Wentworth     | 430.2                   | 74.2                    | 21.7                     |
| Halton                 | 273.8                   | 10.0                    | 4.6                      |
| Waterloo               | 325.8                   | 1.8                     | 0.7                      |
| Peel                   | 641.2                   | 2.4                     | 0.5                      |
| Metro Toronto          | 2,228.1                 | 1.5                     | 0.1                      |
| Other Ontario          | 5,304.6                 | 7.6                     | 0.2                      |
| Other                  | -                       | 2.4                     | -                        |

In summary, the highest market share is made up of Hamilton-Wentworth residents. The Halton region is the second most penetrated area; however, the rate is far lower than for the primary segment.

These figures suggest the Conservation Area primarily serves a local market at the present time.

## 5.5 Conclusions

Further development of the Christie Conservation Area is necessary to reduce the operating deficit. Increased demand will provide an opportunity to increase revenues.

New development must correspond to market demand. Visitors are travelling shorter distances and staying for relatively short periods. They demand diversity in their recreational opportunities. Most visitors come to Christie for family outings and picnics. However, when asked for changes required, respondents to the questionnaire survey mentioned





more facilities and attractions and better swimming. These changes would also help meet the demands of the resident market who enjoy physically active pursuits.

Any new facility or activity must compliment the outdoor orientation and natural appeal of the Conservation Area. As well, there is an increasing interest in activities for learning and self-improvement and therefore, educational programming could be expanded.

The development concept must be supported by appropriate marketing strategies. First, marketing should be concentrated in the primary market area. Second, pricing must reflect the ability to pay increased fees while remaining within competitive limits.

Essentially, users should pay for the service - the more intensive the use, the higher the price. Third, advertising methods should be diverse and shared. In order to reach the largest possible market, many media and information sources should be applied. Costs may be somewhat prohibitive; therefore, it is important that joint promotions be pursued.

This approach emphasizes revenue generating opportunities. Consequently, Christie might be perceived differently by some members of the public - perhaps, more as a recreation site than as a passive park or education area. It is inevitable that some patrons will disapprove, but new people will be attracted. Moreover, the development of popular recreation at Christie may draw attention away from the more environmentally sensitive areas.





## 6. PLANNING POLICIES

The purpose of this section is to assess the implications of planning policies for the Christie Conservation Area. Municipal planning and Niagara Escarpment policies and the Environmental Assessment Act are reviewed.

### 6.1 Description of Planning Policies

Christie Conservation Area is within three planning jurisdictions - the Region of Hamilton-Wentworth, the Town of Flamborough and the Niagara Escarpment Commission (Figure 4).

The planning policies of the Region and Town which are relevant to Conservation Area planning are reprinted in Appendix 4.

#### Region of Hamilton-Wentworth Official Plan

The policy area designations in the Official Plan are general in nature. The expectation of the Regional Municipality is that the policies will be reflected more specifically and rigorously in the Area Municipality planning documents and in the Niagara Escarpment Commission planning documents where applicable.

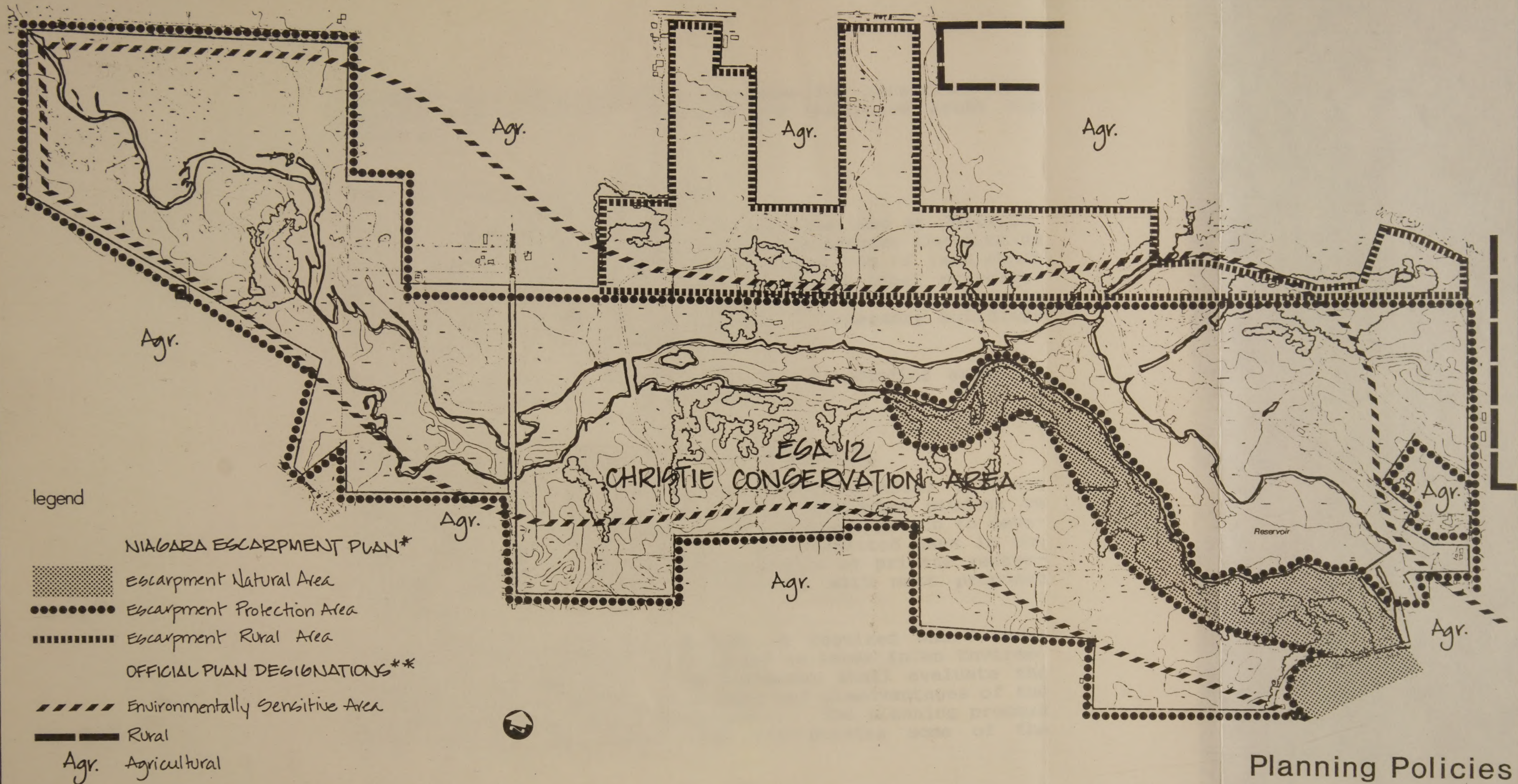
The Official Plan designates Christie Conservation Area in the rural policy area. This designation and corresponding policies are not a constraint to additional recreation or cultural uses for Christie provided that, in general, natural resources are protected and the rural character of the area is preserved.

The Regional policies encourage Conservation Authorities to pass regulations governing the use of Environmentally Sensitive Areas they own to protect them from loss and damage. The Conservation Authority is not bound by this provision, but has a sense of responsibility to its intent and purpose.









## Planning Policies

Figure 4

CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY

\* the entire site is within the Niagara Escarpment Planning Area

\*\* the entire site is designated open space and conservation





The Town of Flamborough draft policies for Sensitive Areas provide more direction regarding the Sensitive Areas for Christie.

#### Town of Flamborough Official Plan

Figure 4 depicts the Official Plan designations at Christie. The Town of Flamborough Official Plan designates the site as "Conservation" which means the predominant use of land shall be for conservation, open space or recreational purposes. This designation is not likely to be a constraint to expansion of development in the Area. Accessory buildings and structures are also permitted.

The "Agriculture" designation for the surrounding areas is also not a constraint to development.

#### Town of Flamborough Draft Official Plan (1986)

The draft policies relating to Sensitive Areas are not currently in effect, however, it is considered prudent to ensure that proposals reflect a responsible approach to development and use of these areas. The permitted uses in the Sensitive Areas include compatible public or private recreational uses which should not conflict with most proposed activities.

An Environmental Impact Statement is required where development or redevelopment is proposed on lands in an Environmentally Sensitive Area. The Statement shall evaluate the potential effects and the advantages and disadvantages of the undertaking (the proposed development). The planning process undertaken for the Master Plan incorporates some of the





requirements of the Impact Statement. It includes an analysis of biophysical constraints to development for each alternative and a discussion of the advantages and disadvantages of the alternatives.

## 6.2 Niagara Escarpment Commission (NEC) Plan 1985

The Christie Conservation Area is located within the jurisdiction of the Niagara Escarpment Plan. Lands are designated (Figure 4):

- o Escarpment Natural Area (South Shore)
- o Escarpment Protection Area (most of site)
- o Escarpment Rural Area (north portion of site)

The NEC policies are the most restrictive of the planning policies applying to Christie. All three land use designations restrict intensive recreational uses and the building of major structures.

The NEC has established a park planning policy for all parks on the Niagara Escarpment. The policy, Section 3.1.6 of the Niagara Escarpment Plan, states:

- "1. Park management agencies will prepare plans for each park in the Niagara Escarpment Parks System. Each Plan will establish policy guidelines for long-term protection, development and management of the park. Agencies involved with specific park plans must ensure that the implementation of the



plan and operation of the park meet the requirements of The Environmental Assessment Act.

2. The land use designations of the Niagara Escarpment Plan will be used as a guide in the park planning process instead of a final statement on permitted uses. Park zoning developed through the planning process takes precedence over land use designations in the Niagara Escarpment Plan once a park plan is deemed not to conflict with the Niagara Escarpment Plan.
3. Parks without a plan are subject to the land use policy designations of the Niagara Escarpment Plan.
4. Park plans will provide for the zoning of parks and appropriate management prescriptions for each zone in the park.
5. The route of the Bruce Trail through the parks shall be identified as the Bruce Trail Corridor in park management plans and managed in cooperation with the Bruce Trail Association.
6. A change in the classification of a park as a result of the park planning process shall not require an amendment to the Niagara Escarpment Plan."

The Christie Conservation Area is classified as a recreation park. In Recreation Parks, as defined by the NEC, management and development of park resources is appropriate in order to provide the recreational environment and facilities required to support a wide variety of activities. These parks may be day-use only, or may also offer facilities for overnight camping.





Certain classes of development within the conservation area are presently subject to the development control procedures of the Niagara Escarpment Commission (NEC). An exemption to development control as it applies to the implementation of the Master Plan may be obtained through an amendment to Ontario Regulation 685/80. The NEC is a commenting agency for Conservation Area Plans as part of the Ministry of Natural Resources (MNR) approval process.

To obtain NEC approval, a Conservation Area Master Plan, at a minimum, must address the following:

- o The classification of the park must be stated and there should be a rationale for the classification. If the classification varies from that shown in the Niagara Escarpment Plan, the reasons for the proposed change must be outlined (See Section 10).
- o A zoning map for the park, with accompanying zone policies, must be included in every park plan. The zones should generally correspond to those outlined in Section 3.1.5 of the Niagara Escarpment Plan. Zones and/or zone policies which vary substantially from those outlined in the Plan must be explained (See Section 10).
- o The general role of the park within the Niagara Escarpment Parks System must be explained. The relationship of the park to nearby Escarpment Parks and the Nodal parks must be addressed (See Section 8).
- o The plan should outline the relationship of the property to the Bruce Trail. The discussion should examine both existing and potential routes for the Bruce Trail (main trail and side trails). The feasibility of providing overnight rest areas for Bruce Trail hikers should be examined (See Section 10).





- o The plan should highlight any biological, geological or cultural features which are significant in the Niagara Escarpment context (See Section 4).
- o The plan should outline proposed Niagara Escarpment Interpretive facilities. Such proposals should classify facilities as being of local, regional or provincial significance (See Section 11.4).

### 6.3 Environmental Assessment Act

The Environmental Assessment Act was reviewed with respect to the Christie Master Plan. The key section of the EA Act for the Christie Conservation Area is Ontario Regulation 205 which addresses all activities of conservation authorities vis-a-vis the Environmental Assessment Act.

In particular, Section 8(2) of Regulation 205 states that "an undertaking by an authority is exempt from the provisions of subsection 5(1) of the Act<sup>1</sup> if the undertaking is solely for the purpose of,

- (i) development of conservation areas and campgrounds having a cost of not over \$1,000,000."

Based upon negotiations between the Association of Conservation Authorities of Ontario (ACAO) and the Ministry of the Environment (MOE), Section 8(2)(i) should be interpreted as 'new' conservation area and campground development. The ACAO

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<sup>1</sup> Subsection 5(1) of the Environmental Assessment Act requires the submission of an EA document.





has an understanding with the Ministry that replacement or upgrading of existing development is not 'new' development. However, 'significant' expansion of existing facilities do come under the EA Act and subsection 5(1). Unfortunately, a clear interpretation of the word 'significant' does not exist.<sup>1</sup>

As an established public recreation area, the development proposal for Christie in the Master Plan update can be considered as an expansion of existing facilities. However, each optional design concept and the preferred plan must be evaluated for "significance" to determine whether the EA Act applies.

#### 6.4 Conclusions

There are four major aspects to the planning policies as they relate to Conservation Area planning. First, the land use designations in Christie and the surrounding area may be interpreted as compatible with new recreation or cultural development.

Second, the site is designated as a sensitive area, therefore, impacts on the natural environment must be avoided or mitigated.

Third, the Conservation Area lies completely within the NEC planning area. In general, development is somewhat restricted in the NEC planning area although certain classes of development are exempt under the existing Development

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<sup>1</sup> Based on discussions with Russ Powell, Executive Director, the Association of Conservation Authorities of Ontario.



Control Regulations. An exemption to development control, as it applies to implementation of the Master Plan, may be obtained through an amendment to Ontario Regulation 685/80.

Fourth, expansion of existing development within a Conservation Area does not constitute 'new' development and is not subject to Section 5(1) of the Environmental Assessment Act unless the proposed development is considered to be 'significant'.





## 7. CONSTRAINTS ANALYSIS

An analysis of constraints posed by the natural environment, land uses, policies and heritage resources was undertaken.

Slope, vegetation, wildlife and aquatic habitat were evaluated to determine the sensitivity of habitat types to disturbance.

Slope was considered important because of the potential costs and impacts associated with grading to attain a developable site. Therefore, slopes greater than 25% were evaluated as posing a significant constraint. Slopes of 0-5% posed no constraint.

Vegetation communities are a dominant landscape feature governing wildlife habitat, microclimate and soil development. The sensitivity to disturbance was evaluated based on the rarity of species, maturity, condition, longevity and viability.

The significance of wildlife habitat was based on interpretation of the characteristics of the habitat including food value and availability, cover/shelter, size of the habitat and linkages to other habitats.

The sensitivity of aquatic habitat to development was evaluated based on an interpretation of bank stability and shade cover.

Figure 5 indicates habitat types and levels of sensitivity.

High sensitivity areas would include any combination of:

- o slopes greater than 25%;
- o high significance vegetation;



- o core wildlife habitat; and
- o high quality aquatic habitat.

Moderate sensitivity areas include any combination of:

- o slopes 11-24%;
- o medium significance vegetation;
- o buffer wildlife habitat; and
- o medium quality aquatic habitat.

Low sensitivity areas include any combination of:

- o slopes 0-10%;
- o low significance vegetation;
- o low quality wildlife habitat; and
- o low quality aquatic habitat.

Existing and planned land use adjacent to the site was also reviewed to determine constraints to development. The Orenco industrial complex is adjacent to the northeast corner of the site. Rural residential and agricultural land uses abut other areas of the site.

Policies of the Conservation Authority were also considered in determining site constraints. Policies regarding flood plains, Environmentally Sensitive Areas and fish and wildlife management plans were reviewed.

The Darnley Mill was identified as a significant heritage resource. New development near the Mill would have to preserve and protect that resource.

Most of the Conservation Area has a low to moderate sensitivity to development. North of the reservoir, vegetation was cleared for cultivation and now this location is used as a picnic area. Wooded areas remain along water courses. West of Town Line Road, the field ecosystems are moderately





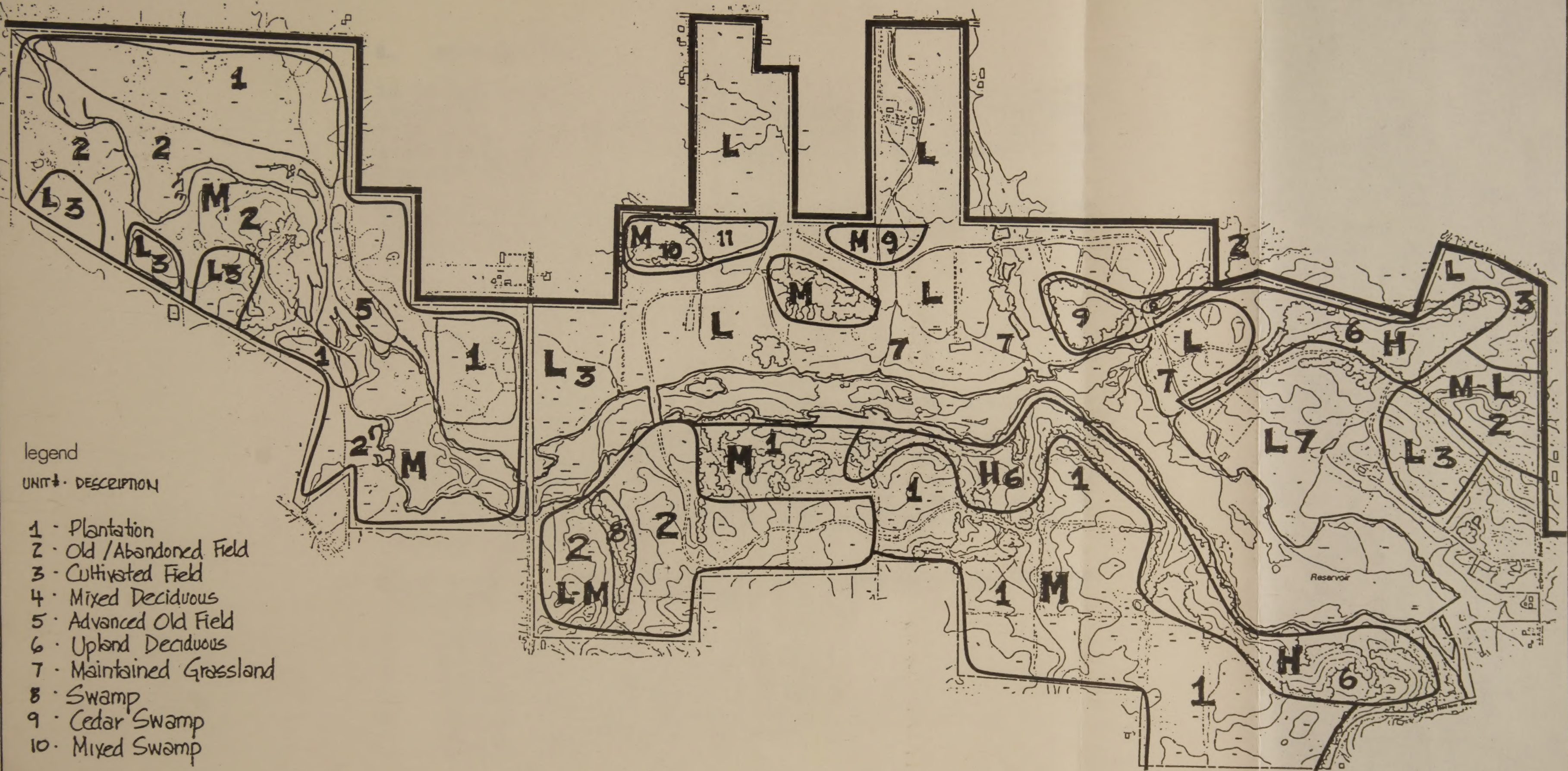
sensitive to development. South of the reservoir, only the wooded slope has a high sensitivity to development.

The implication for the Master Plan is that environmental protection measures will be required if development is planned in areas with moderate or high sensitivity. Methods to mitigate environmental impact will have to be considered in site planning and detailed design phases.

sensitive to development. South of the reservoir, only low  
wooded slopes have a high sensitivity to development.

The vegetation for the Master Plan is very important.  
Protection measures will be required if development is  
planned in areas with sensitive or high sensitivity. Methods  
to mitigate environmental impact will have to be considered  
in the planning and detailed design phases.





legend  
UNIT# - DESCRIPTION

- 1 - Plantation
- 2 - Old / Abandoned Field
- 3 - Cultivated Field
- 4 - Mixed Deciduous
- 5 - Advanced Old Field
- 6 - Upland Deciduous
- 7 - Maintained Grassland
- 8 - Swamp
- 9 - Cedar Swamp
- 10 - Mixed Swamp

H - High  
M - Medium  
L - Low

} LEVEL OF SENSITIVITY

Habitat Types - Sensitivity

Figure 5





## 8. ROLE AND THEME

It is important to establish the role of the Christie Conservation Area within the context of other Authority holdings. This helps to determine the appropriate type and level of development for the site in comparison to other properties in the watershed.

The Authority owns, leases and/or manages 19 conservation areas and Confederation Park. These properties are categorized as:

- o reservoir-based
- o Niagara Escarpment parks
- o waterfront
- o wetland
- o special heritage

The Christie site is one of the three reservoir-based projects (along with Valens and Crooks Hollow). All are located in the Town of Flamborough, on the Spencer Creek. The Authority's Watershed Plan established that future development for these sites will emphasize the expansion and diversification of recreational facilities, improvement of wildlife habitats and restoration and interpretation of heritage conservation sites.

Eleven other conservation areas are categorized as Niagara Escarpment parks. They include:

- o Spencer Gorge Wilderness Area
- o Borer's Falls Conservation Area
- o Summit Bog Muskeg Preserve
- o Dundas Valley Conservation Area
- o Governor's Road Conservation Area
- o Spring Creek Conservation Area
- o Tiffany Falls





- o Felker Falls Conservation Area
- o Devils Punch Bowl
- o Vinemount Conservation Area
- o Winona Conservation Area

Uses of these areas are focused on hiking and interpretation. While Christie is not categorized by the Authority as a Niagara Escarpment park, it is within the Niagara Escarpment Planning Area (see Section 5). The Authority's role in acquiring, conserving and providing access to the Niagara Escarpment is:

- "o To assist the Province of Ontario and the affected member municipalities in protecting the Niagara Escarpment as a continuous natural environment by means of acquisition and regulatory controls.
- o To manage lands acquired by the Authority on the Niagara Escarpment and to protect environmentally sensitive ecosystems, flora and fauna and important historical sites.
- o To provide for passive outdoor recreational use on lands acquired by the Conservation Authority consistent with the escarpment resource."

The Christie Conservation Area is located upstream of the Crooks Hollow Conservation Area, a Niagara Escarpment Park classified as historical. The linkage of both parks to the Niagara Escarpment is founded on the historic Spencer Creek - Crooks Hollow corridor. Other Niagara Escarpment parks in the area are Summit Bog, Dundas Valley and Tiffany Falls. The closest Niagara Escarpment nodal park (key staging area and interpretive centre for the Escarpment) is the Dundas Valley Conservation Area, about 5 km south.

The Authority is involved in three waterfront projects: the Hamilton Beach Strip (restricted to acquisition of





properties); Confederation Park; and Fifty Point. The latter two provide a variety of active recreational activities. A Master Plan study for Hamilton Beach is underway.

The Authority has two wetland reserves acquired for water management on Spencer Creek. These sites are used for hiking, interpretation and fishing.

The Authority is also involved with the development and maintenance of the Fieldcote Memorial Park.

The Christie site is one of the three conservation areas that have been historically planned and developed for a high level of recreational use. Because of the investment in existing facilities, two possible roles for the Christie site were examined: recreation and cultural. Possible recreation development opportunities are listed and grouped into three levels: passive, active or intense. Possible cultural development opportunities are grouped as local, community or regional scale facilities. Appendix 5 includes the list of development opportunities considered for the site.

Also examined were optional themes for the embellishment of the role and specific development opportunities.

The following themes for development were reviewed.

|                                   |                                                         |
|-----------------------------------|---------------------------------------------------------|
| <u>Historic/Heritage</u>          | History of agriculture and rural Ontario lifestyle.     |
| <u>Conservation<br/>Education</u> | Interpretation of the natural and heritage environment. |
| <u>Aquatic</u>                    | Focus on water/water-based activities and facilities.   |





|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <u>Local Environment</u> | Site specific environmental qualities and features.  |
| <u>Future</u>            | Futuristic theme, e.g. environment in the year 2025. |

### 8.1 Evaluation of Development Components

The development components contained in Appendix 5 were evaluated to determine the most appropriate uses for the site.

First, the components were assessed for their compatibility with planning policies, Authority goals and for their ability to generate revenue. The components were also evaluated for their compatibility with one another. The results of these assessments were used to select preferred roles, themes and possible development components. Appendix 5 includes the evaluation matrices.

The results of the evaluation indicate that both passive recreation and local scale cultural components are compatible with planning policies and promote Authority goals, but they have limited revenue potential. The intense level of recreation components and regional scale cultural activities are constrained by the Environmentally Sensitive Area and Niagara Escarpment policies and do not consistently promote the Authority goal and recreation philosophy. These components generally have revenue potential. Some of the active level of recreation and community scale cultural activities have the same constraints as above. Most of these activities also have revenue generation potential. Generally, greater levels of intensity of development have greater constraints but also a greater capability to generate revenue.





The development components were also evaluated for their compatibility with one another. The purpose of the evaluation was to develop groups of compatible components. The evaluation matrix included in Appendix 5 serves as a tool to select groups of components which work well together and provide complementary functions.

## 8.2 Preferred Level of Development

The evaluation of components relative to study goals indicates that intense levels of recreation activity and regional scale cultural activities have constraints. A higher level of effort will be required to ensure minimal environmental effects and to obtain approval for these activities.

It is recommended that a blend of active level recreation and community level cultural activities be selected as the role for the Conservation Area. The preferred theme is local environment. This theme can be used to promote the unique natural setting of the Area and to unify the facilities. Within the overall role, limited intense activities could be considered, subject to their environmental impact and compatibility with planning policies.



## 9. CONCEPTS AND EVALUATION

The purpose of this section is to present and evaluate the concept options. The section provides:

- o the basis used to develop concepts;
- o concept descriptions;
- o concept evaluation;
- o an evaluation of optional methods of improving lake swimming; and
- o description of the preferred concept.

### 9.1 Concept Development

A number of factors affected the organization of development components into design concepts. The preceding section described the process used to identify development components, roles and themes. The preferred role for the site is a blend of active level recreation and community level cultural activities. The preferred theme is local environment promoting the unique natural setting of the Area and unifying the facilities. Limited intense activities are also possible within the overall role.

Design concepts were based on:

- o the role and theme of the Area;
- o the need for a key feature; and
- o preferred development components.

The concepts were developed to provide a broad range of activities and facilities within the preferred role and theme developed for the Area. It is recognized that the









Concept Plan A  
Figure 6

CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY













concepts may be modified in scale, scope and/or activities and facilities with the identification and development of a preferred concept.

## 9.2 Concept Descriptions

This section provides descriptions of each design concept and the relationship of each concept to the preferred role and theme. Every concept includes a new central workshop and yard facility for the Authority. The study Terms of Reference advised of the Authority's intention to relocate the central workshop and yard from its present location in the Dundas Valley Conservation Area to the Christie Conservation Area. The Christie site affords a better location for an expanded central workshop because of available land area and direct access from Highway 5.

Appendix 6 includes a list of activities, facilities, performance standards and costs associated with each concept.

### 1. Concept A

Concept A provides a variety of active year-round recreation opportunities. Water-based activities are centred on the north side of the reservoir around the existing beach pavilion. A dish pool and children's water play area are proposed near the beach. Ski rixen, cableway water skiing, is incorporated into the concept to provide a key revenue generating attraction. This facility is located close to other water-based activities.

A lodge is proposed on the south side of the reservoir at the top of the slope, nestled in the woods. Activities associated with the lodge would include hiking, cross-country





skiing, woodland skating, tobogganning, luge run, water slide and tube slide. The lodge would provide a starting point, final retreat and point of observation for park visitors.

Concept A also includes a hiking trail around the reservoir and a park drive from Darnley Mill past the lodge, across the causeway to the beach and ski rixen.

Figure 6 and 7 illustrate the concept.

## 2. Concept B

This concept is developed around a community level cultural role. An "Arts" community is proposed for the wooded slopes of the reservoir south of the beach area. Two major theatres are suggested: one glass-enclosed "theatre in the woods" on the peninsula of land along the south shore; and one outdoor amphitheatre on a cleared peninsula along the north shore near the dam. The key features are the indoor performing arts auditorium, dance theatre and studios, music hall, theatre, lounge and workshops. Programming within this concept would include workshops for adults and school groups to learn and see the performing and fine arts.

The facilities are located to incorporate the local environment/natural setting into their design and location. Figure 8 and 9 illustrate the concept.







legend  
 ----- PROPERTY BOUNDARY

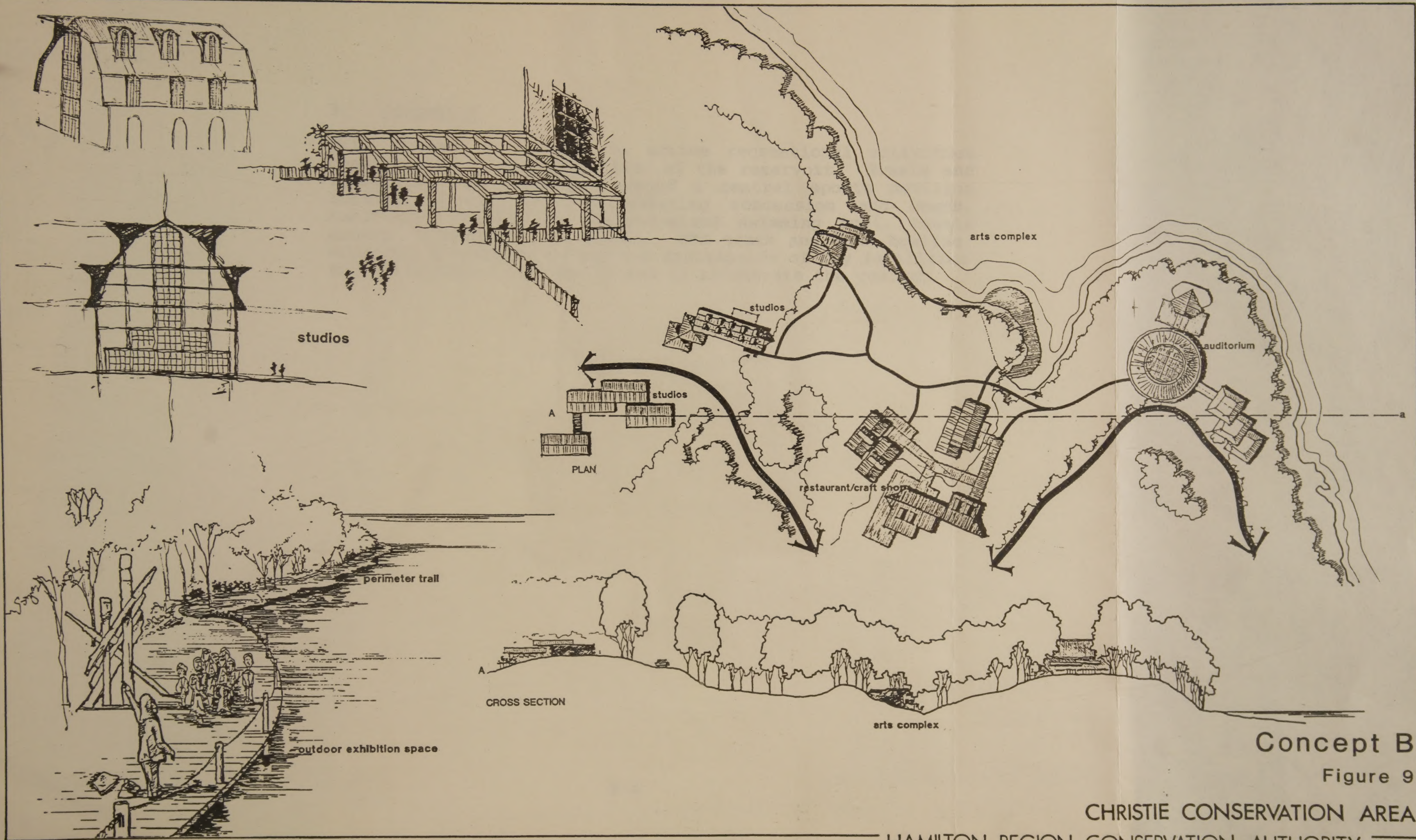
Concept Plan B  
 Figure 8











Concept B

Figure 9

CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY





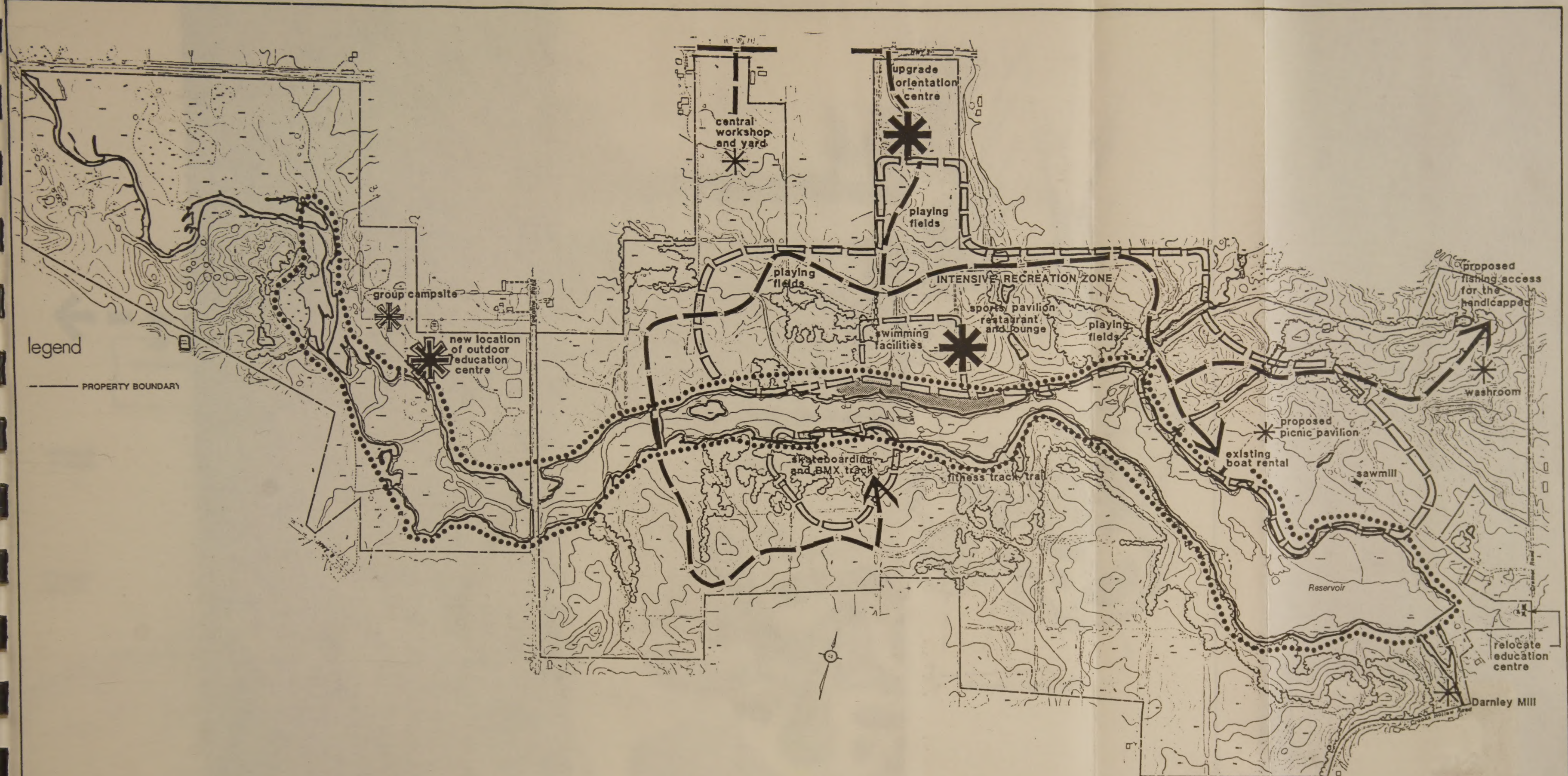


### 3. Concept C

This concept is focused on active recreational activities concentrated on the north side of the reservoir. Events and facilities are organized around a central sports pavilion located adjacent to the existing concession and beach. Facilities include an olympic-sized swimming pool, tennis courts, basketball, volleyball, BMX track and lawn bowling. Appendix 6 contains a detailed description of key facilities and activities. Figures 10 and 11 illustrate the concept.







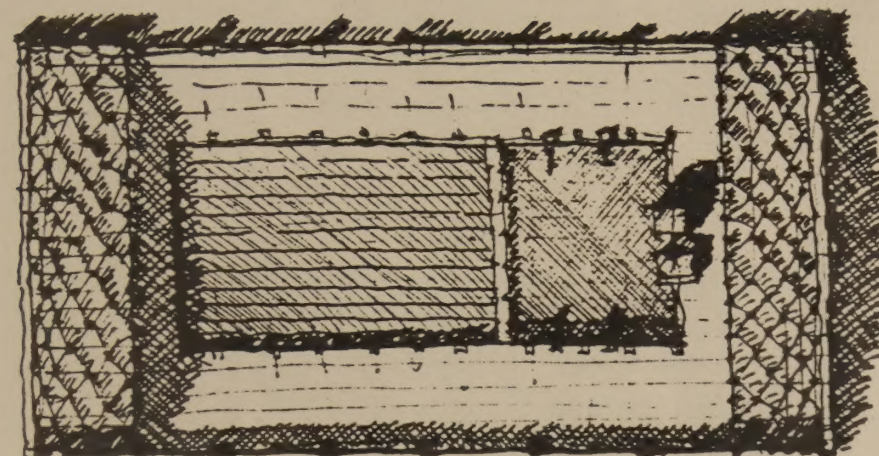
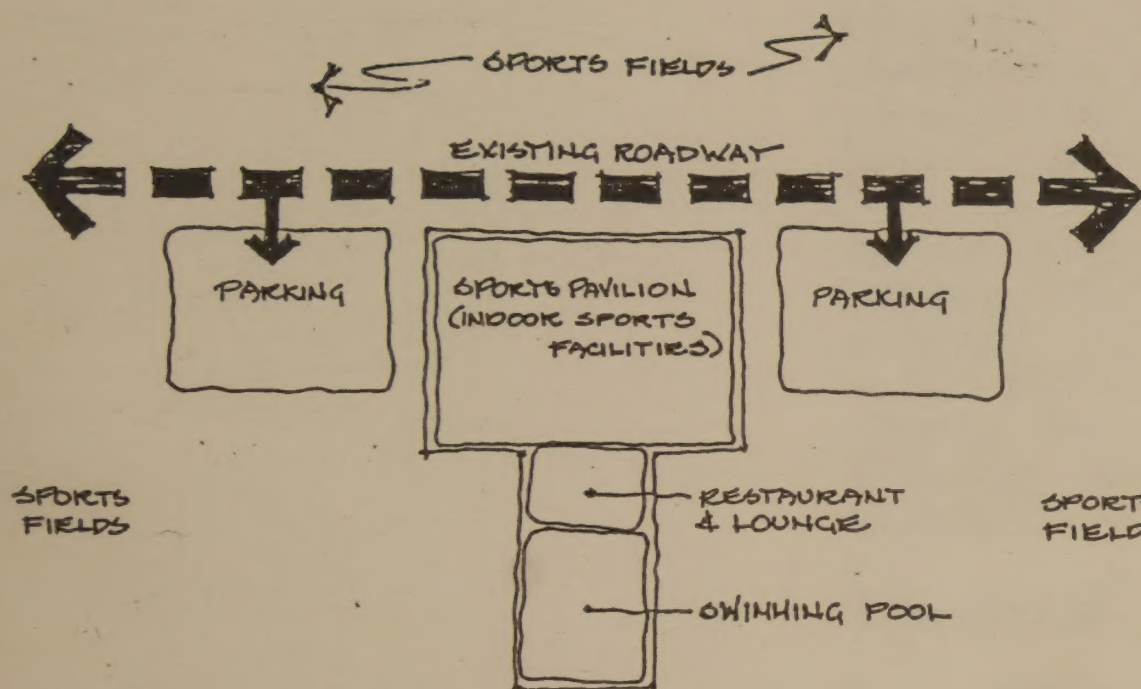
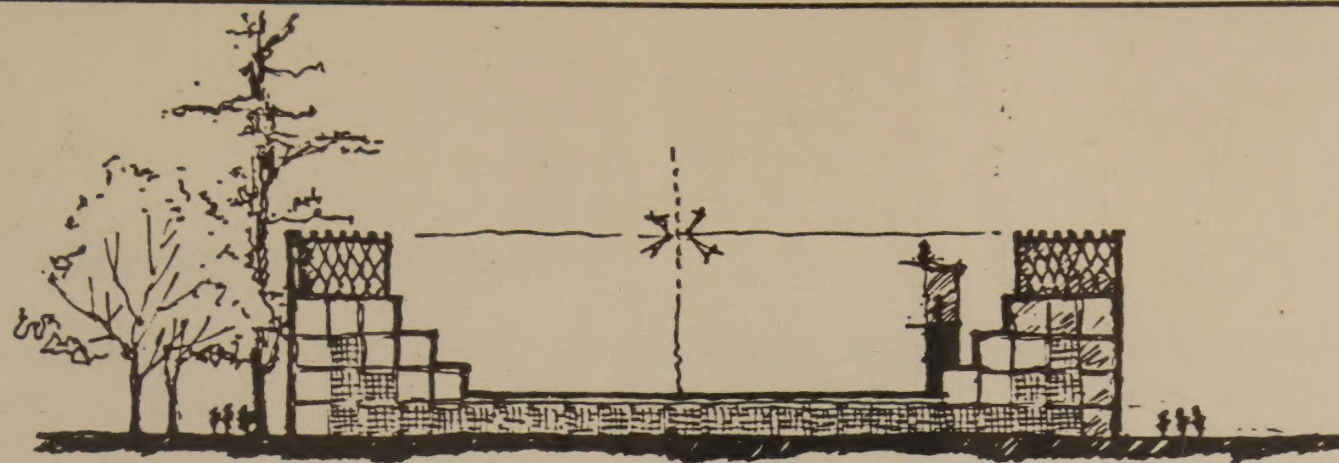
Concept Plan C

Figure 10



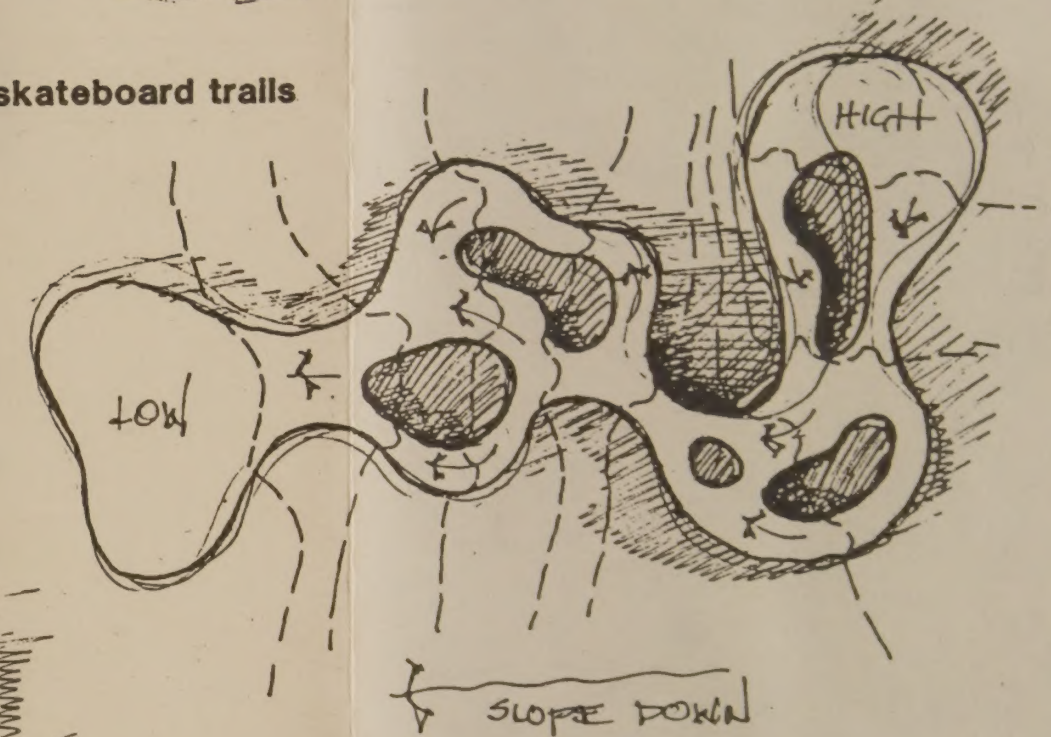






swimming pool

skateboard trails



SPORTS FIELDS

SPORTS FIELDS

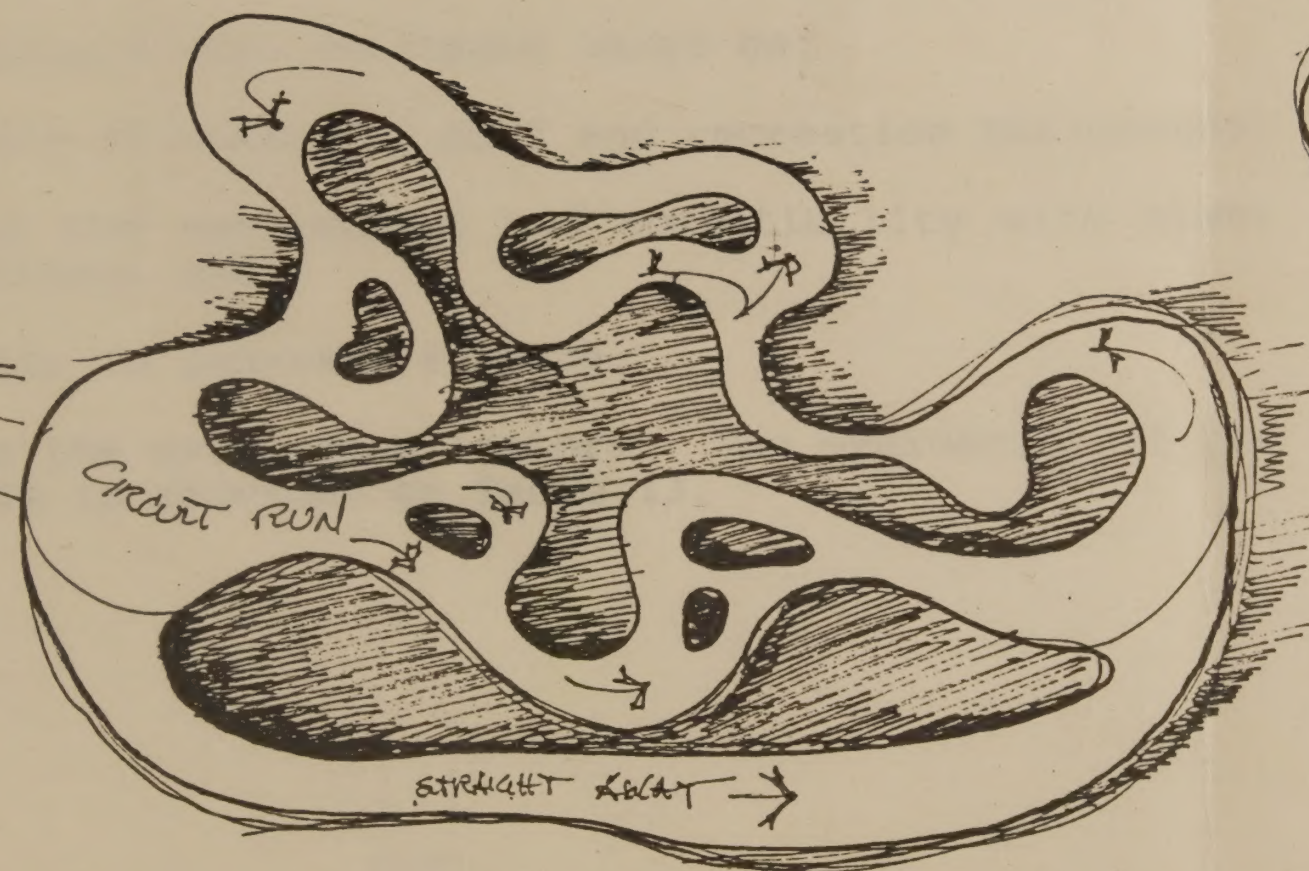
PICNIC AREA

PICNIC AREA

EXISTING CONCESSION & PICNIC SHELTER

BEACH

RESERVOIR



BMX trails

Concept C

Figure 11







### 9.3 Concept Evaluation

The concepts represent different approaches to achieving and promoting the Authority's goal and recreation philosophy at Christie. Each has been developed to demonstrate the different ways in which the role and theme for the site can be embellished. The purpose of evaluating the design concepts is to identify which concept(s) and associated components best achieve and promote the Authority's goal and recreation philosophy and which best fulfill the role and theme identified for Christie.

It is recognized that the design process is iterative in nature and that it is unlikely that one design concept will satisfy all needs, goals, roles and themes. The evaluation will serve to identify which components of the concepts appear to be reasonable and which should be examined in greater detail, with the purpose of developing a preferred concept.

The design concepts were evaluated based on:

- o achievement of Authority goal and recreation philosophy;
- o effect on the environment and compatibility with planning policies; and
- o the ability to generate revenue.

Table 12 lists the evaluation factors. The evaluation of the design concepts is provided on Table 13.



The major trade-off in the preparation of this Master Plan is whether traditional types of recreation opportunities should continue to be provided or whether a new direction should be pursued, providing a unique cultural/recreation experience. The underlying issue is the potential for the facilities and activities to generate revenue and the degree to which the Authority must subsidize the facilities and activities. Consideration of the implications of the Environmental Assessment Act for any "significant" expansion of existing development is also required.

The types of activities and facilities provided will influence the marketing and management approach of the Authority. The options require different approaches to marketing and management. New and different users must be attracted. At the same time, existing visitors must continue to be provided for.





TABLE 12  
CONCEPT EVALUATION FACTORS

| Factor                          | Definition/Rationale                                                                                                                                                                                                       |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a) <u>Recreation Activities</u> |                                                                                                                                                                                                                            |
| 1. User Appeal                  | . assessment of the appeal of the recreation opportunities provided by the concept with regard to their availability elsewhere in the area                                                                                 |
| 2. Spectator Appeal             | . assessment of the appeal of the concept into providing opportunities to casually view activities                                                                                                                         |
| 3. Integration Among Facilities | . assessment of the integration among facilities on-site; as measured by proximity to other site facilities and activities, linkage of proposed facilities to existing facilities between proposed and existing facilities |
| 4. Year-round Use of Site       | . assessment of the seasonal variety of activities                                                                                                                                                                         |





TABLE 12  
CONCEPT EVALUATION FACTORS  
(continued)

| Factor                                          | Definition/Rationale                                                                                          |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 5. Integration of Activities and Site Character | . assessment of the integration of facilities and activities with the local setting and character of the site |
| b) <u>Effects on Environment</u>                |                                                                                                               |
| 6. Terrain                                      | . assessment of the impacts due to changes in topography, soil, drainage pattern and erosion potential        |
| 7. Sensitive Features                           | . assessment of the impacts on sensitive features - environmentally sensitive areas                           |
| 8. Vegetation Habitat                           | . assessment of the impacts on vegetation/habitat due to disturbance or removal                               |
| 9. Wildlife                                     | . assessment of impacts on wildlife populations due to disturbance or removal of habitat                      |



TABLE 12  
CONCEPT EVALUATION FACTORS  
(continued)

| Factor                                  | Definition/Rationale                                                                                                                                                                              |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10. Water Resources/<br>Aquatic Habitat | . assessment of impacts on water quality, quantity and aquatic habitat                                                                                                                            |
| 11. Local Community                     | . assessment of impacts (noise, vehicular traffic, pedestrian traffic) on the local community                                                                                                     |
| 12. Planning Policies.                  | . assessment of the compatibility with the relevant planning policies (Town of Flamborough, Niagara Escarpment, Region of Hamilton-Wentworth) and the requirement for an Environmental Assessment |
| c) <u>Revenue Potential</u>             |                                                                                                                                                                                                   |
| 13. Direct                              | . assessment of the potential to generate revenue directly (on a user fee basis)                                                                                                                  |
| 14. Indirect                            | . assessment of the potential to generate revenues indirectly by increasing attendance                                                                                                            |





#### 9.4 Evaluation of Improvements to Lake Swimming

Optional methods of improving the aesthetic appeal of swimming in the reservoir were reviewed because of concerns for water quality. With a fluctuating water level, fine material stays in suspension making the water turbid. The water quality is continually tested to ensure it meets health standards for body contact recreation, particularly inside the defined swimming area. A boom and curtain currently separates the swimming area's chlorinated water from the rest of the reservoir. The curtain, however does not keep the fine material out. Five methods of improving water quality were examined. The advantages and disadvantages of each are briefly described as follows:

|                                                        | Advantages                                                                                          | Disadvantages                                                                                                                                                        |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Settling Pond with Filtration System (\$1,000,000+) | - would reduce fine material coming into reservoir, particularly in spring                          | - requires regular maintenance<br><br>- does not solve the problem of material already on the bottom of the reservoir                                                |
| 2. Deposit New Coarse Sand Bottom (\$35,000+)          | - relatively inexpensive in short-term, but expensive in long-term with need to add sand every year | - requires maintenance as sand will shift with fluctuating water levels<br><br>- coarse sand is less appealing than fine sand<br><br>- does not remove fine material |





|                                                                   | Advantages                                                                                                       | Disadvantages                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. Dredge Existing Swimming Area and Lay New Material (\$20,000+) | - relatively inexpensive in short-term, but expensive in long-term, with the need to add new material every year | - expensive<br>- would release fines and nutrients previously locked in bottom sediments<br>- would cause temporary very poor conditions<br>- would cause little improvement because of small area dredged<br>- would require regular maintenance |
| 4. Purification                                                   | - relatively inexpensive                                                                                         | - addition of purification compounds does not remove suspended material                                                                                                                                                                           |
| 5. Asphalt Swimming Area                                          | - would cover all sediment                                                                                       | - very expensive<br>- asphalt would break up under water - not feasible                                                                                                                                                                           |

While there are disadvantages and advantages associated with each method, it is unlikely that treating such a small area of the reservoir would have a significant effect on the swimming area given the volume of turbid water in the remainder of the reservoir. Therefore, the provision of a swimming or wading pool was considered to be an important element of the Plan.





CONCEPT  
EVALUATION: CHRISTIE CONSERVATION AREA

| A. Recreation Facilities & Activities         |                                   | CONCEPT A                                                                                                                                                                                                                                                                                                                                                       | CONCEPT B                                                                                                                                                                                                                                                                                                                                                               | CONCEPT C                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. User Appeal                                |                                   | High user appeal with water slides, pool, ski rixen<br>Ski rixen is regionally unique, however other water based facilities are available elsewhere in Hamilton area (eg. Confederation Park)                                                                                                                                                                   | High user appeal<br>Exclusive facility set in the woods<br>Regionally unique facility                                                                                                                                                                                                                                                                                   | Moderate user appeal<br>Facilities available elsewhere in Hamilton area                                                                                                                                                                                                                                                                                                                         |
| 2. Spectator Appeal                           |                                   | High                                                                                                                                                                                                                                                                                                                                                            | Low                                                                                                                                                                                                                                                                                                                                                                     | Medium                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. Integration of Facilities                  |                                   | Water related activities clustered on north shore<br>Lodge provides focal point for all activities winter/summer<br>Ski rixen removes portion of reservoir from use for other activities                                                                                                                                                                        | Arts/cultural activities clustered in facilities on south shore                                                                                                                                                                                                                                                                                                         | Facilities dispersed throughout the site                                                                                                                                                                                                                                                                                                                                                        |
| 4. Year-round Use of Site                     |                                   | Provides winter/summer opportunities                                                                                                                                                                                                                                                                                                                            | Provides winter/summer opportunities                                                                                                                                                                                                                                                                                                                                    | Use concentrated in spring/summer/fall<br>Gymnasium provides year-round opportunities                                                                                                                                                                                                                                                                                                           |
| 5. Integration of Activities & Site Character |                                   | Appeal of lodge depends on its woodland setting                                                                                                                                                                                                                                                                                                                 | Appeal and success of concept depends upon woodland setting for the arts facility                                                                                                                                                                                                                                                                                       | Facilities could be built anywhere                                                                                                                                                                                                                                                                                                                                                              |
| B. Environmental Effects                      |                                   |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6. Terrain                                    |                                   | Generally minor effects<br>Facilities such as proposed road, lodge, orientation centre, water slide, tube slide, tobogganning, downhill skiing, luge run could result in potentially significant effects. However they can be accommodated without significant effects through design and construction process. Additional cost required.                       | Generally minor<br>Facilities on south shore (music hall, theatres, dance pavillion) could result in potentially significant effects. However, they can be accommodated without significant effects through design and construction process. Additional cost required                                                                                                   | Generally minor<br>Skateboard and BMX track may potentially have significant effects. Terrain will be major component of design. Alterations to terrain may be not be required                                                                                                                                                                                                                  |
| 7. Sensitive Features                         |                                   | Generally minor effects<br>Facilities such as proposed road lodge and lodge related activities are locatd in an area of high sensitivity. Additional cost required to accommodate facilities in an environmentally sound manner                                                                                                                                 | Generally minor<br>Facilities on south shore (music hall, theatres, dance pavillion) are located in an area of high sensitivity. Additional cost required to accommodate facilities in an environmentally sound manner                                                                                                                                                  | Generally minor                                                                                                                                                                                                                                                                                                                                                                                 |
| 8. Vegetation / Habitat                       |                                   | Generally minor<br>Lodge, lodge related facilities will require removal of vegetation<br>Removal requirements will be kept to a minimum to increase appeal of lodge and lodge related activities                                                                                                                                                                | Generally minor<br>Vegetation removal will be required for facilities on south shore. Natural setting desired for facities, removal of vegetation will be kept to a minimum                                                                                                                                                                                             | Generally minor<br>Facilities located primary in field/lawn habitat                                                                                                                                                                                                                                                                                                                             |
| 9. Wildlife                                   |                                   | Generally minor<br>Loss of habitat on south shore will have some effects on local population<br>Ski rixen will remove portion of reservoir as available habitat to local wildlife                                                                                                                                                                               | Generally minor<br>Loss of habitat on south shore will have some effect on local population                                                                                                                                                                                                                                                                             | Generally minor                                                                                                                                                                                                                                                                                                                                                                                 |
| 10. Water Resources / Aquatic Habitat         |                                   | Ski rixen could have some impact on water resources (eg. increased wave action and turbulence from water skiers may affect water quality and aquatic habitat).<br>Extent unknown<br>Water slides, tube slides will require internal water supply and treatment capability                                                                                       | Generally minor                                                                                                                                                                                                                                                                                                                                                         | Generally minor                                                                                                                                                                                                                                                                                                                                                                                 |
| 11. Local Community                           |                                   | Potentially significant. Orientation Centre and proposed south access will increase impacts (traffic, noise) on residents adjacent to south                                                                                                                                                                                                                     | Facilities/activities are located away from sensitive uses to south and east of the site<br>Outdoor amphitheatre may increase noise levels for adjacent uses, potentially significant effect                                                                                                                                                                            | Facilities/actitivites located away from sensitive adjacent uses                                                                                                                                                                                                                                                                                                                                |
| 12. Planning Policies                         |                                   | No conflict with Town and Regional policies provided that sensitive natural features are protected<br>Proposed lodge and lodge related activities located in NEC Natural Area zone. Intensive recreation uses and building structures must be planned in environmental sound manner to promote the natural landscape character<br>An EA will likely be required | No conflict with Town and Regional policies provided that sensitive natural features are protected<br>Proposed music hall, theatre and dance pavillion located in NEC Natural Area zone. Intensive recreation uses and building structures must be planned in an environmentally sound manner and to promote the escarpment character.<br>An EA will likely be required | No conflict with Town and Regional policies provided that sensitive natural features are protected<br>No features planned in most restrictive NEC zone<br>Intensive recreation features north of reservoir are in NEC Protection Area. Building structures and development should be developed to promote the landscape character and protect natural features<br>An EA will likely be required |
| C. Revenue Potential                          |                                   |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                 |
| Direct (D)                                    |                                   | D                                                                                                                                                                                                                                                                                                                                                               | D                                                                                                                                                                                                                                                                                                                                                                       | D                                                                                                                                                                                                                                                                                                                                                                                               |
| Indirect (I)                                  |                                   | I                                                                                                                                                                                                                                                                                                                                                               | I                                                                                                                                                                                                                                                                                                                                                                       | I                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Water slides                      | +                                                                                                                                                                                                                                                                                                                                                               | +                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Dish pool                         | (-),0                                                                                                                                                                                                                                                                                                                                                           | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Tube ride                         | +                                                                                                                                                                                                                                                                                                                                                               | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Water play                        | (-),0                                                                                                                                                                                                                                                                                                                                                           | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Ski rixen                         | (-),0                                                                                                                                                                                                                                                                                                                                                           | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Hot tubs                          | (-),0                                                                                                                                                                                                                                                                                                                                                           | 0                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Boat launch/storage               | 0                                                                                                                                                                                                                                                                                                                                                               | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Picnicking                        | 0                                                                                                                                                                                                                                                                                                                                                               | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Expand concession                 | +                                                                                                                                                                                                                                                                                                                                                               | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Restaurant/lounge                 | +                                                                                                                                                                                                                                                                                                                                                               | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Natural history/interpretation    | (-)                                                                                                                                                                                                                                                                                                                                                             | (-)                                                                                                                                                                                                                                                                                                                                                                     | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Group camping                     | (-),0                                                                                                                                                                                                                                                                                                                                                           | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Hiking                            | 0                                                                                                                                                                                                                                                                                                                                                               | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Orientation centre                | 0                                                                                                                                                                                                                                                                                                                                                               | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Improved vehicle circulation      | (-)                                                                                                                                                                                                                                                                                                                                                             | (-)                                                                                                                                                                                                                                                                                                                                                                     | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Mass transit                      | (-)                                                                                                                                                                                                                                                                                                                                                             | (-)                                                                                                                                                                                                                                                                                                                                                                     | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Parking                           | (-)                                                                                                                                                                                                                                                                                                                                                             | (-)                                                                                                                                                                                                                                                                                                                                                                     | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Pedestrian water crossing         | (-)                                                                                                                                                                                                                                                                                                                                                             | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Handicapped fishing pond          | (-),0                                                                                                                                                                                                                                                                                                                                                           | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Cross-country ski trail           | 0                                                                                                                                                                                                                                                                                                                                                               | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Outdoor skating rink              | 0                                                                                                                                                                                                                                                                                                                                                               | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | "Bunny" slope                     | (-)                                                                                                                                                                                                                                                                                                                                                             | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Tobogganning run                  | +                                                                                                                                                                                                                                                                                                                                                               | +                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Luge run                          |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                               | Outdoor amphitheatre              |                                                                                                                                                                                                                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Indoor performing arts auditorium |                                                                                                                                                                                                                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Dance theatre/studies             |                                                                                                                                                                                                                                                                                                                                                                 | +,0                                                                                                                                                                                                                                                                                                                                                                     | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Music hall                        |                                                                                                                                                                                                                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Cinema                            |                                                                                                                                                                                                                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Painting studio/workshop          |                                                                                                                                                                                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                       | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Sculpture studios/workshop        |                                                                                                                                                                                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Craft studios/workshop            |                                                                                                                                                                                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Outdoor exhibition plaza          |                                                                                                                                                                                                                                                                                                                                                                 | (-),0                                                                                                                                                                                                                                                                                                                                                                   | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Administration building           |                                                                                                                                                                                                                                                                                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Cabins                            |                                                                                                                                                                                                                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Dining lounge/social club         |                                                                                                                                                                                                                                                                                                                                                                 | +                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Boardwalks through woods          |                                                                                                                                                                                                                                                                                                                                                                 | (-),0                                                                                                                                                                                                                                                                                                                                                                   | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Improved roadways                 |                                                                                                                                                                                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Parking lots                      |                                                                                                                                                                                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Trails                            |                                                                                                                                                                                                                                                                                                                                                                 | (-),0                                                                                                                                                                                                                                                                                                                                                                   | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Orientation centre                |                                                                                                                                                                                                                                                                                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Olympic pool                      |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Basketball courts                 |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Volleyball courts                 |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Badminton courts                  |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Squash courts                     |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Tennis courts                     |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Roller rink                       |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Skate-boarding track              |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | BMX track                         |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Horseshoe pits                    |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Lawn bowling                      |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Baseball diamonds                 |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Football field                    |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Soccer field                      |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Games room                        |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | +                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Gymnasium                         |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | (-),0                                                                                                                                                                                                                                                                                                                                                                                           |
|                                               | Fitness track                     |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Restaurant/lounge                 |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | +                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Parking lots                      |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
|                                               | Improved roadways                 |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         | 0                                                                                                                                                                                                                                                                                                                                                                                               |
| Evaluation Summary                            |                                   |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                               |                                   | Provides traditional Conservation Authority recreation opportunities<br>Provides regionally unique opportunities and strong summer/winter orientation<br>Builds upon and incorporates unique natural setting of the area<br>Increases level of service to existing users and attracts new users to the facility                                                 | - Provides opportunities in a new direction for the Authority<br>- Relies heavily on outside grants and participation to ensure success<br>- Provides a regionally unique opportunity and strong year-round orientation<br>- Builds upon and incorporates unique natural setting of the area<br>- Attracts new users to area, while providing for existing uses         | - Provides comprehensive regional sports facility<br>- Supports a wide variety of activities<br>- Minimal capital improvements required<br>- Results in least disruption to unique natural features of the area<br>- Provides increased level of service to existing users                                                                                                                      |

Table 13



# **CONCEPT EVALUATION: CHRISTIE CONSERVATION**

| A. Recreation Facilities & Activities         | CONCEPT A                                                                                                                                                                               |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. User Appeal                                | High user appeal with water slide. Ski rixen is regionally unique, available elsewhere in Hamilton.                                                                                     |
| 2. Spectator Appeal                           | High                                                                                                                                                                                    |
| 3. Integration of Facilities                  | Water related activities clustered. Lodge provides focal point for activities.                                                                                                          |
| 4. Year-round Use of Site                     | Ski rixen removes portion of residential area. Provides winter/summer opportunities.                                                                                                    |
| 5. Integration of Activities & Site Character | Appeal of lodge depends on its integration with site character.                                                                                                                         |
| B. Environmental Effects                      |                                                                                                                                                                                         |
| 6. Terrain                                    | Generally minor effects. Facilities such as proposed road, slide, tobogganing, downhill ski, significant effects. However the effects through design and construction can be minimized. |
| 7. Sensitive Features                         | Generally minor effects. Facilities such as proposed road in an area of high sensitivity. Facilities in an environmentally sensitive area.                                              |
| 8. Vegetation / Habitat                       | Generally minor. Lodge, lodge related facilities. Removal requirements will be kept to a minimum. Lodge related activities.                                                             |
| 9. Wildlife                                   | Generally minor. Loss of habitat on south shore. Ski rixen will remove portion of wildlife.                                                                                             |
| 10. Water Resources                           | Ski rixen could have some impact on water resources. Action and turbulence from water.                                                                                                  |

## 9.5 Preferred Concept

Concept "A" was selected as the preferred concept by the Technical Committee and the Conservation Areas Advisory Board. There are several features that were modified or eliminated during design development based on:

- o public input;
- o comments received from Technical Committee Members;
- o direction given by the Conservation Areas Advisory Board or Full Authority.

The major changes were:

| <u>Item</u>                                           | <u>Rationale</u>                                                                                          |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Eliminate ski rixen                                   | - at the direction of the Conservation Areas Advisory Board (29 April 1987).                              |
| Eliminate water slides, tube rides                    | - direction of Technical Committee                                                                        |
| Golf Course                                           | - was added and then removed at the direction of the Conservation Areas Advisory Board (19 February 1987) |
| Emphasis on hiking trails and interpretive facilities | - added at the direction of the Conservation Areas Advisory Board (19 February 1987)                      |
| Maintain Education Centre at existing location        | - lack of support from Board of Education                                                                 |







| Item                                     | Rationale                                                           |
|------------------------------------------|---------------------------------------------------------------------|
| Eliminate road off Crooks Hollow Road    | - lack of public support                                            |
| Removal of dish pool                     | - cost<br>- proposed a children's splash pool as an alternative     |
| Addition of horseback riding facilities  | - public support                                                    |
| Eliminate downhill ski run, tobogan hill | - incorporate a snow slide because less vegetation removal required |

The modified Concept A provides traditional types of recreational opportunities and offers unique experiences within the setting of the Conservation Area. The children's splash pool and renovated beach pavilion plus the Lodge and its associated activities, provide new opportunities at Christie. With a broader range of activities, the gate fee could be increased to help generate more revenues. In addition, the Lodge, horseback riding, beach concession and boat rental are separate revenue generating facilities.

In view of the extent of existing development and public use of the Conversation Area and the character of the property, it is suggested that the Master Plan Update based on modified Concept A is not a significant expansion to existing development and therefore, is not subject to the requirements of the EA Act.



## 10. PARK ZONING

As reviewed in Section 5, the site is within the Niagara Escarpment Commission (NEC) Planning Area, and is classified as a recreation park. The Niagara Escarpment Plan states that:

"...these are some of the best recreational environments along the Escarpment.

...are capable of being developed to provide a wide variety of outdoor recreation.

...management and development of park resources is appropriate in order to provide the recreational environment and facilities required to support a wide variety of activities..."

No change is proposed to this classification. The Niagara Escarpment Plan requires a zoning map and policies to accompany every park plan. Figure 12 identifies park zoning. The location and policy associated with each zone is summarized as follows:

| <u>Zone</u> | <u>Location</u>                               | <u>Policy</u>                                                                                                                                                   |
|-------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Natural  | - wooded areas<br>(natural and<br>plantation) | - minimum of deve-<br>lopment is per-<br>mitted to support<br>low to medium<br>intensity recrea-<br>tion activities,<br>e.g. hiking,<br>cross-country<br>skiing |
| 2. Access   | - all roads and<br>parking lots               | - staging areas<br>- minimal facili-<br>ties are permitted<br>to support the use<br>of other zones                                                              |



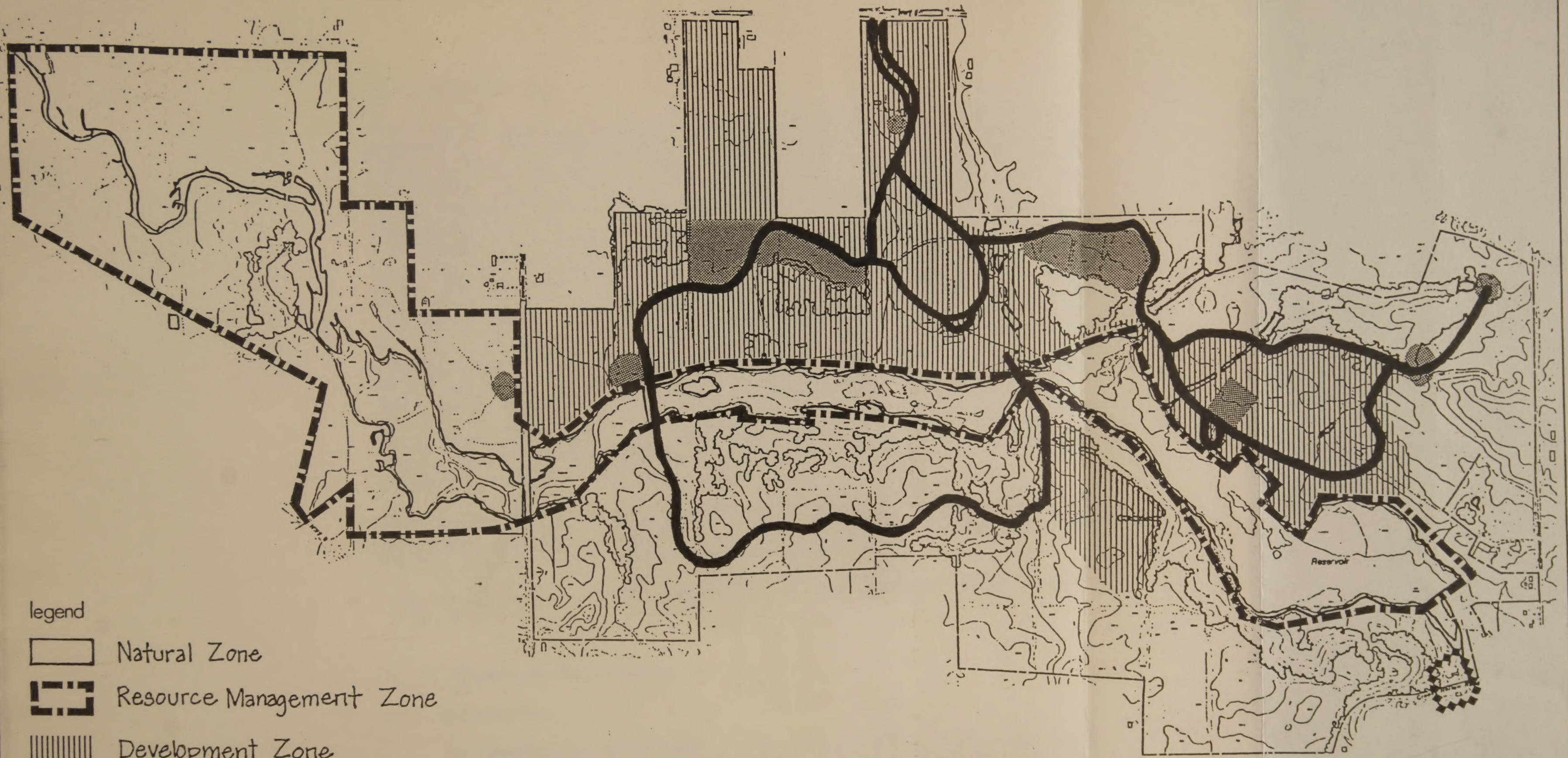


| <u>Zone</u>            | <u>Location</u>                                                                                        | <u>Policy</u>                                                                               |
|------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 3. Historical          | - Darnley Mill                                                                                         | - significant historic feature requires management to ensure its long-term protection       |
| 4. Development         | - Christie Lodge<br>- beach<br>- works yard<br>- entrance buildings<br>- North Shore picnic/play areas | - provide main access<br>- provide facilities and services to support recreation activities |
| 5. Resource Management | - wildlife management area<br>- reservoir                                                              | - provide intensive management of resources                                                 |

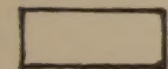
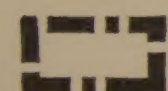
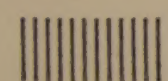
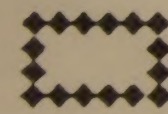
The Niagara Escarpment Plan also requires an outline of the relationship of the Conservation Area to the Bruce Trail. Christie is not located on the Bruce Trail. The Trail passes through Spencer Gorge Wilderness Area located on the escarpment approximately 5 km downstream along Spencer Creek. A side trail of the Bruce Trail could be extended north from Spencer Gorge through Crooks Hollow to the Christie site, using the proposed Lodge as an interpretive centre and trail head.







legend

-  Natural Zone
-  Resource Management Zone
-  Development Zone
-  Access Zone
-  Historic Zone



## Park Zoning

Figure 12

CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY





## 11. MASTER PLAN

The Master Plan encourages year-round use of the site. Activities on the north side of the reservoir are focused on water-based recreation centred around the renovated beach pavilion. A children's splash pool is integrated with the beach and pavilion offering a convenient alternative to lake swimming. The renovated pavilion with a snack bar, washrooms and changeroom, and outdoor deck provides a focus for meeting, gathering, eating and viewing. Picnicking remains the main use of lands on the north side of the reservoir. The pavilion, pool and beach are physically and visually connected to a pedestrian bridge that crosses the reservoir to the Christie Lodge. The Lodge provides the focus for spring, fall and winter activities on the south side of the reservoir. In a wooded setting, the Lodge offers a cozy and enclosed retreat. Facilities include a small snack bar/cafe, exhibit space, gift shop, meeting/presentation room, washrooms and offices. The Lodge provides a focus for woodland skating, snow slides, cross-country skiing, hiking and interpretive exhibits.

This section summarizes proposed facilities, circulation and programs. The reader is directed to study the associated plans, sections and elevations for detail.

The Master Plan is in a pocket at the end of this report (Figure 13.)

### 11.1 Entrance Buildings

#### a) Gatehouse

No change to structure. Personnel in the gatehouse will concern themselves with issues of registration and the monitoring of entry and exit.





b) Barn

Building to be used for storage and maintenance. The Plan is flexible to allow the barn to be used as an orientation/interpretation centre if demand warrants. The centre would incorporate display space, a presentation/demonstration area, seating, washrooms and an office. The exterior of the barn is in good condition. Minor modifications could be made to coordinate this building with others on site. The roof could be changed to cedar shakes and trim could be painted a complementary earth tone colour.

c) Superintendent's Residence

No change to structure or its use.

d) Site Map

A large map (1.2 m wide x 2.4 m high) of the site will be located immediately south of the gatehouse to provide the visitor with clear orientation to the topography, natural features, facilities and programs of the Area. Information pamphlets will be made available to describe specific features and programs, e.g. nature trails, special events, ski trails, horseback riding, etc.

11.2 Beach Complex (Figure 14)

a) Beach Pavilion (Figure 15)

The existing beach pavilion will continue in its present capacity providing washrooms, change rooms, a snack bar and a picnic shelter. However, some structural and cosmetic changes are required to give the building a stronger presence on the site:





- . Addition of four raised skylights (3 m x 3 m) in the roof to brighten the existing interior spaces and picnic shelter to enhance the profile of the building.
- . Construction of unit paving entrance plaza (250 m<sup>2</sup>) and drop-off area north of the existing entrance.
- . Construction of an 8 metre vertical water element in the plaza entrance. This water sculpture would be user-interactive and, for safety, be located over a catchment grill so that water does not pond.
- . Addition of lattice screen walls near entrances to the picnic enclosure; these would create more visual interest and help to soften the "hard-edge" character of the building.
- . Addition of a timber deck (150 m<sup>2</sup>) for an outdoor patio/ viewing area. The deck is connected to a viewing terrace that overlooks the beach.

b) Children's Splash Pool

Construction of a 750 m<sup>2</sup> children's steel-reinforced concrete play pool. The maximum depth would be 60 cm. Features would include:

- . Three small waterslides (vertical drop 1 to 3 m)
- . Spring-mounted animals (six to eight)
- . Randomly-timed water jets (six to eight)
- . A continuous tented awning (60 m in length x 5 m wide) along the north side of the splash pool providing a shaded seating/rest area



. A continuous 5 m wide boardwalk along the north edge linked to the terrace and beach boardwalk.

c) South Terrace

A timber terrace (150 m<sup>2</sup>) extends from the existing foyer and snack bar of the beach pavilion to the beach. This facility provides an outdoor patio for the snack bar and will have umbrella tables, chairs and planters for annual flowers. The terrace will intersect the secondary pedestrian axis created by the proposed beach boardwalk and the children's splash pool boardwalk.

d) Viewing Terrace

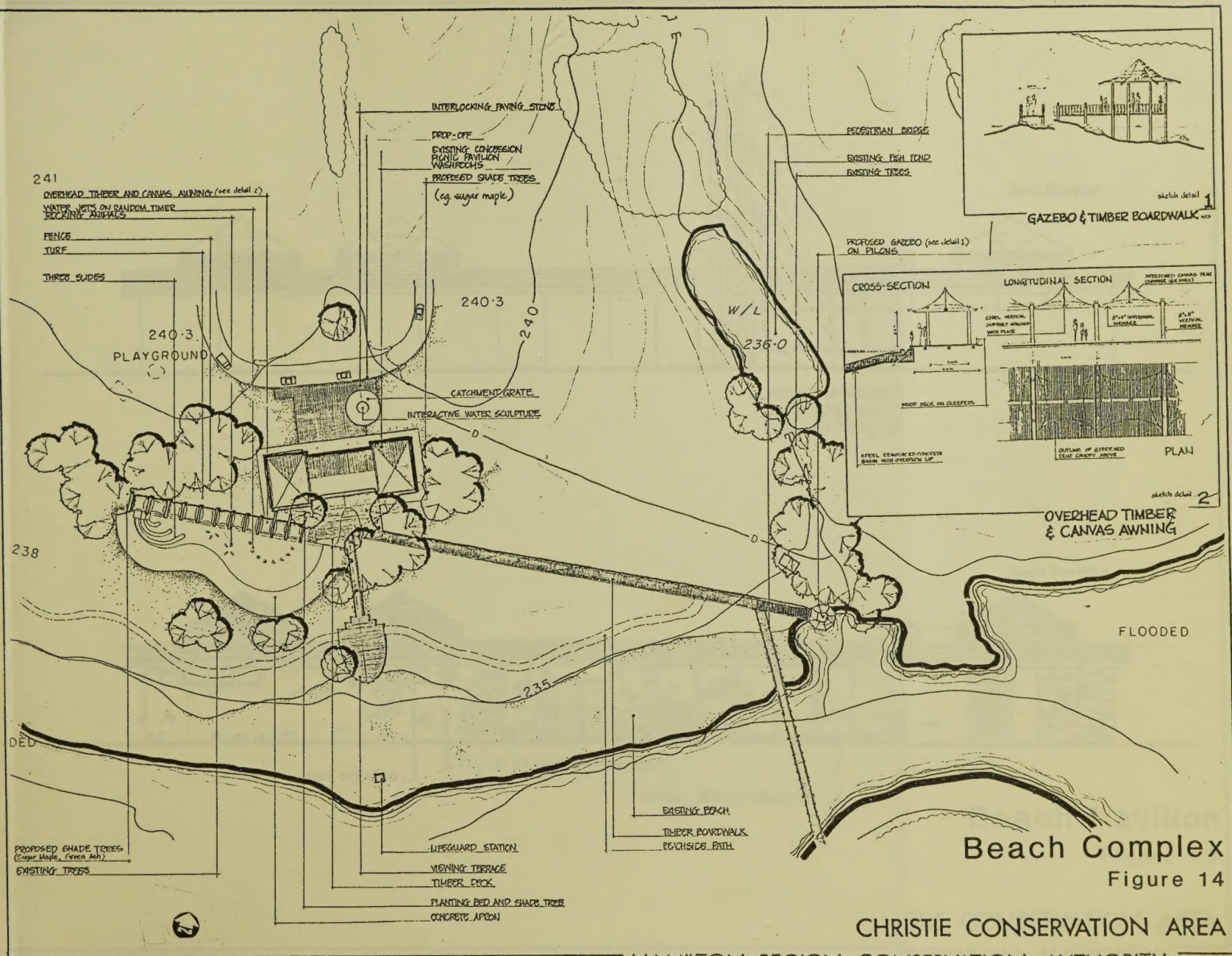
A major structural feature of the beach will be a large timber terrace (225 m<sup>2</sup>) located on the north/south axis created by the beach pavilion and its terraces. It will become the visual focus and viewing area for all beach-related activities.

e) Sand Beach

No change. Given the continued importance of the beach activities to the economic success of the entire site, water quality and beach cleanliness remain a top maintenance priority.

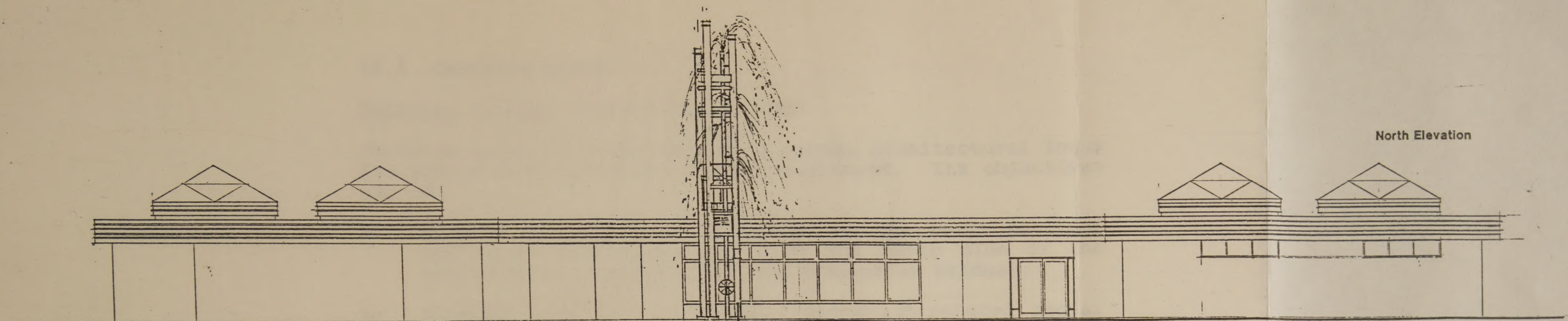






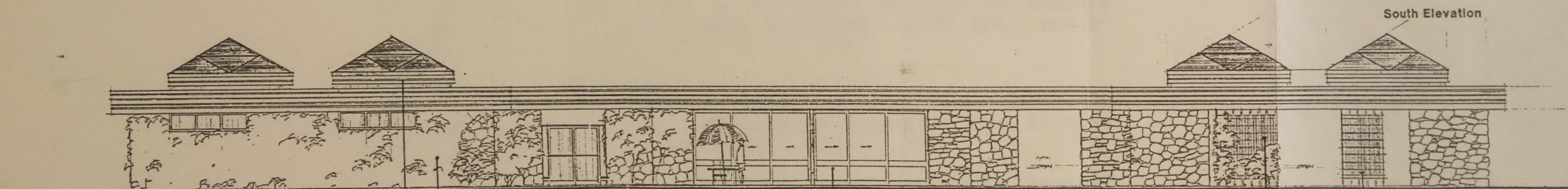






North Elevation

• Vertical identification feature, with water spray controlled by park patrons, and with timing device for turn-off.



South Elevation

• new skylights

• ivy - to tie building to landscape

• sliding doors to snack bar

• new terrace

• trellis screens with ivy - increase interest of shelter

## Beach Pavilion

Figure 15

CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY





### 11.3 Christie Lodge

#### Building Concept (Figure 16a and 16b)

Christie Lodge is envisioned as a strong architectural focus for year-round recreation and entertainment. Its objectives are to:

- a) provide complementing facilities to the beach pavilion and water recreation centre on the north side of the reservoir (with access via the pedestrian bridge);
- b) provide a centre for winter recreation-related social functions;
- c) provide a destination for those seeking dining and entertainment in a natural setting;
- d) provide a small meeting facility for organizations requiring day conference facilities with associated dining;
- e) provide a gift shop and/or small gallery to support specialized crafts, local artisans, folk art, sculptures, vernacular architecture, etc.;
- f) provide a cafe/snack bar.

The site of the building and proposed materials give it rich character and appeal. The building will:

- a) be anchored to its hillside site via cantilevered construction (emphasized through the use of broad wood decks through the existing trees);





- b) reflect its setting with the use of local building stone;
- c) be integrated into existing and proposed outdoor recreation programs and pedestrian circulation. This will be achieved by:
  - . boardwalk and bridge connections to the beach pavilion;
  - . integration into existing and proposed cross-country, snowshoe and hiking trails that circumnavigate the reservoir;
  - . visual screening of roads and parking adjacent to the Lodge.

To establish the building location, a site investigation was undertaken with Niagara Escarpment Commission staff. The building site will be set back from the top of bank above the reservoir to avoid impacts to slope vegetation during construction. Selective clearing will be undertaken for construction of the boardwalk and steps down slope to the pedestrian bridge.

The Lodge will include a 60 seat cafe/snack bar, a 40 seat lounge with a fireplace, display area, outdoor deck, kitchen, office and washrooms. The lounge could be rented for meetings, seminars, presentations, etc. If demand for use of the facility increases, both the cafe and the lounge could be expanded and a separate meeting room added.





The Lodge could also be used as an Interpretive Centre for the Conservation Area and the Niagara Escarpment. For the Escarpment, the Centre would describe conditions that are largely local in significance.

The Lodge will be serviced with water, hydro, telephone, gas and septic. Water will be supplied by well(s). A single-phase primary hydro line will be extended from the beach concession. Telephone lines will follow the hydro lines from the beach concession to the Lodge. Gas will be extended from a main on Highway 8 along an easement to the Conservation Area. A septic tank, distribution tank and two tile fields will be installed. Each disposal bed will be about 25 x 55 m in area. Raised leaching beds, similar to that used at the beach pavilion, are proposed.

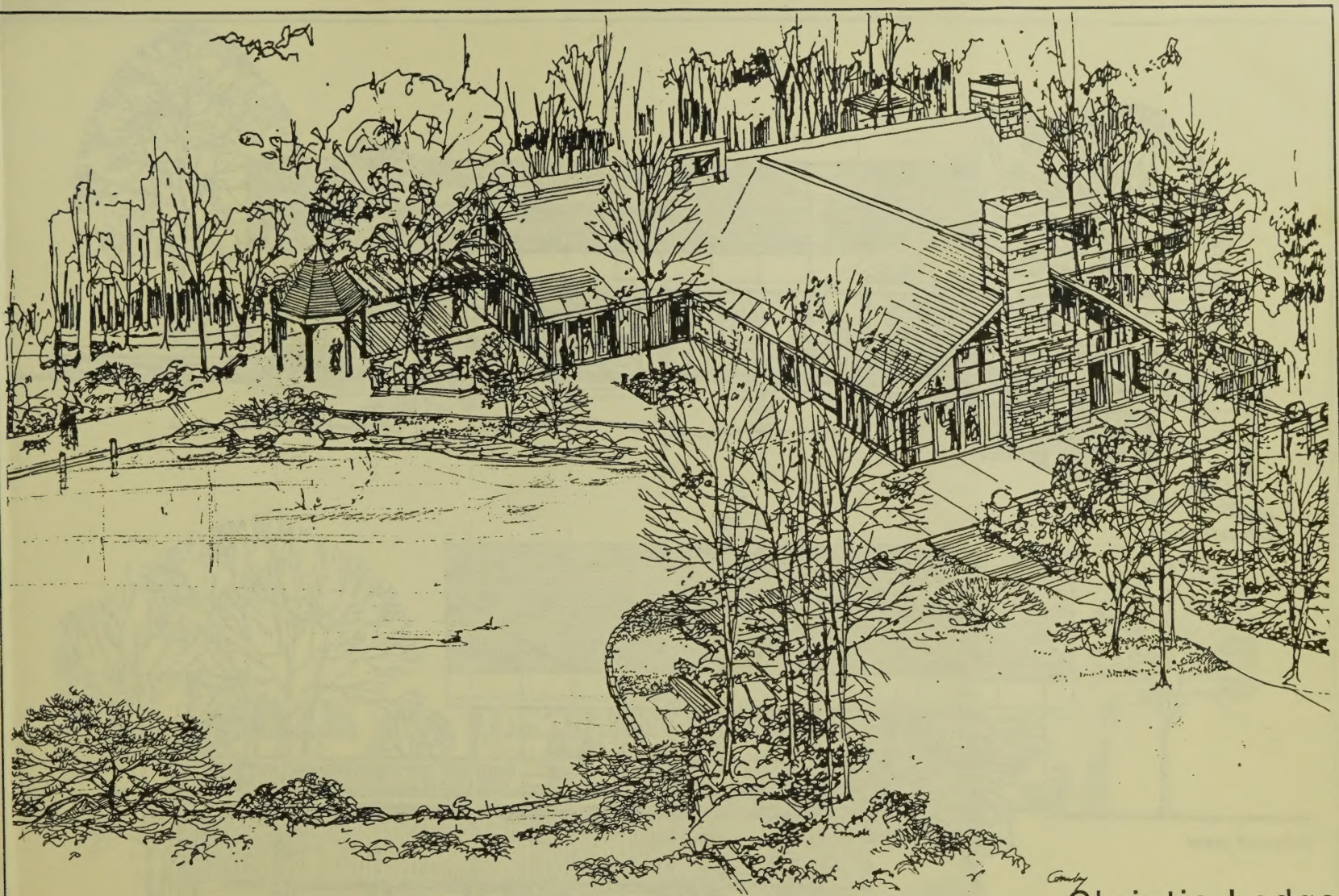
Section 13 includes a detailed analysis of the financial feasibility of three options for the Lodge:

- o 567 m<sup>2</sup> (6,100 ft<sup>2</sup>)
- o 202 m<sup>2</sup> (2,000 ft<sup>2</sup>)
- o 502 m<sup>2</sup> (5,400 ft<sup>2</sup>)

It is proposed that the Lodge be constructed in two phases, beginning with 202 m<sup>2</sup> (Option 2) and expanding as demand warrants.







Comby

## Christie Lodge

Figure 16a

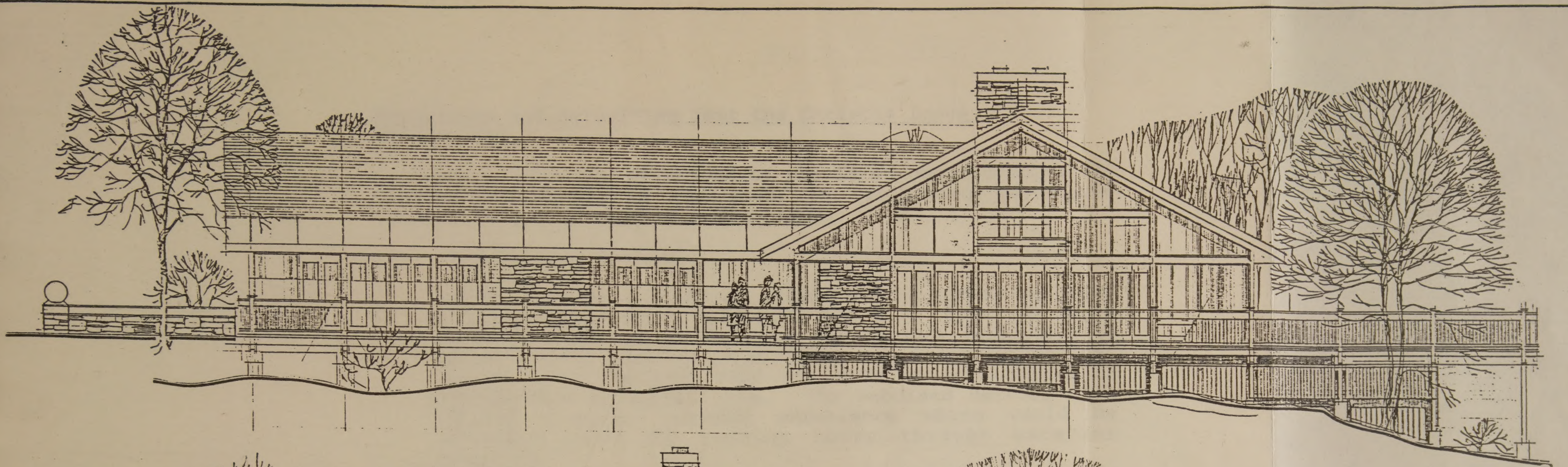
CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY

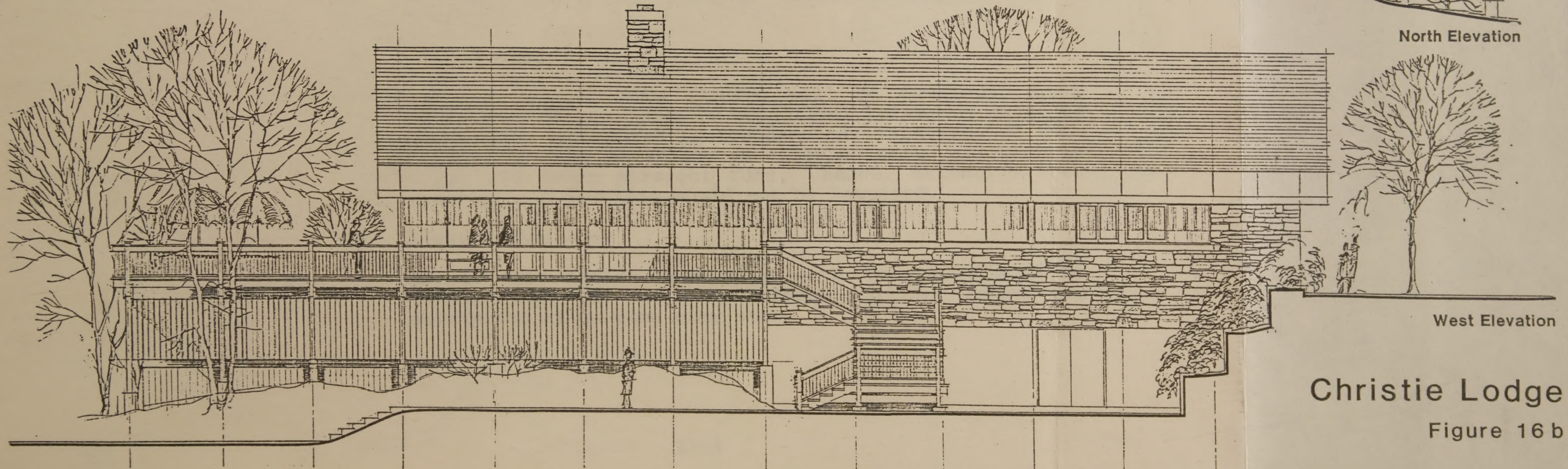








North Elevation



West Elevation

Christie Lodge

Figure 16 b







Facilities and Activities Near the Christie Lodge  
(Figure 17)

In keeping with the objective of providing opportunities for passive recreation in the area, the following associated facilities are located near the Lodge:

a) Pond/Skating Surface

Major features include an island with a timber pergola, a timber pedestrian bridge (5 m x 2 m) from the south entrance plaza of the Lodge to the pergola (removable to allow circuit skating in winter), and limestone boulder shoreline. The pond (900 m<sup>2</sup>) will be constructed to accommodate artificial ice. The woodland setting will create a unique skating experience which could be extended into the evening hours through exterior lighting.

b) Snow Slides

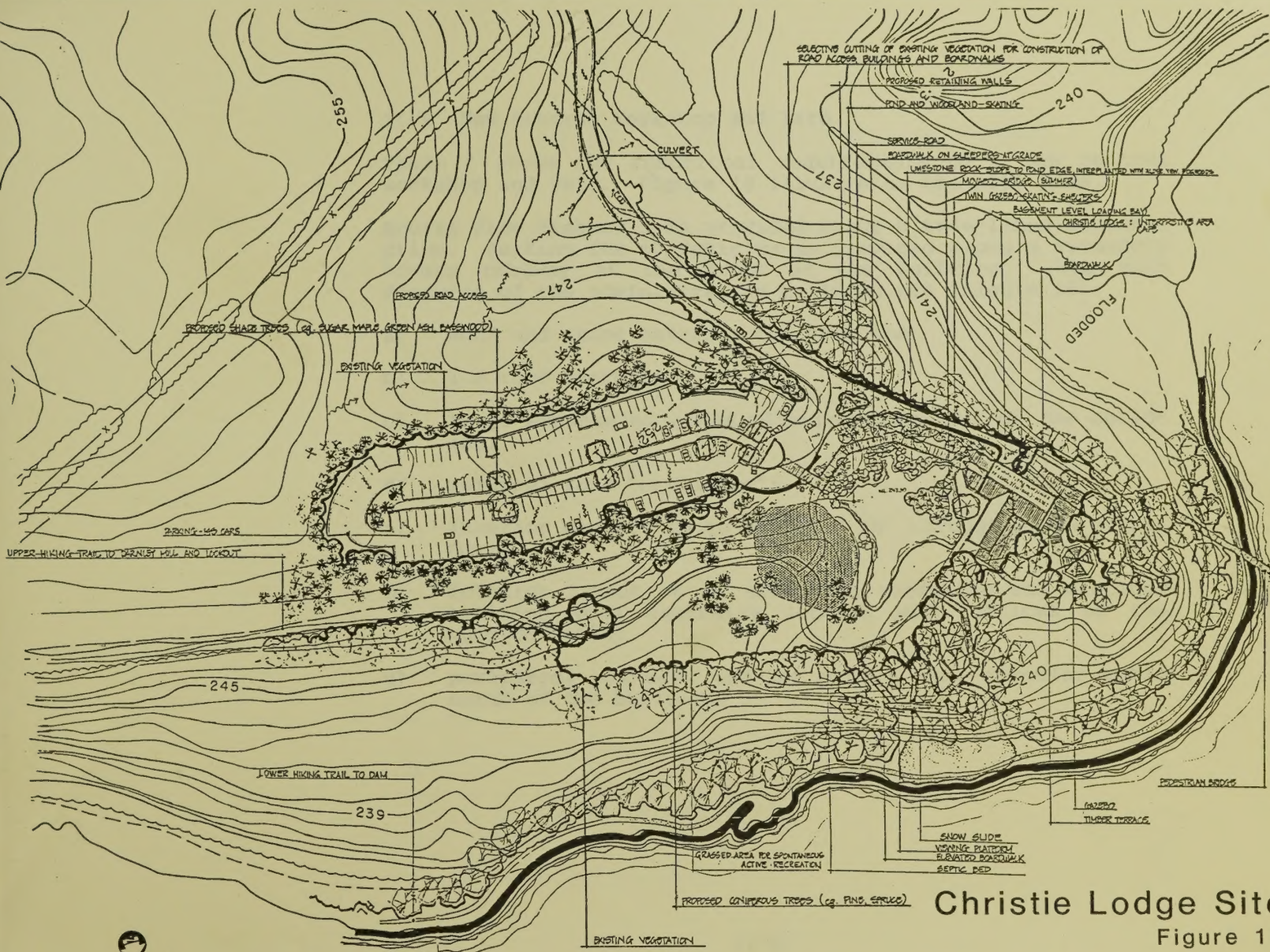
"Flying saucer" snow sliding will be developed on a slope east of the Lodge by selectively clearing existing vegetation. Compared to tobogganning, this type of snow sliding has the advantage of allowing more variation in slope and fewer straight runs. Hence, extensive tree clearing and leveling would not be required.

c) Grassed Play Area

Septic tile fields associated with the Lodge will be located east of the pond. These will be sodded and maintained as an open play area.







Christie Lodge Site  
Figure 17

CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY





#### 11.4 New Central Workshop and Yard

Table 6 shows the functional requirements of a new central workshop and yard. Figure 18 illustrates the site plan.

Access from Highway 5 is provided along a tree-lined entrance drive. Parking for 40 vehicles is provided along a secondary access roadway at the front of the building. The main features of the administration building are (Figure 19):

- a) wood and stone exterior construction;
- b) 1 m roof overhang;
- c) large expanse of glass allowing views out of the building;
- d) vertical roof "skylights";
- e) interior connection to building "B" through glass corridor;
- f) interior layout on an axis with reception and meeting/training room centrally located with offices on the outside walls;
- g) peripheral walkways opening onto a semi-circular patio north of the building.





TABLE 6  
NEW CENTRAL WORKSHOP FUNCTIONAL REQUIREMENTS

| Function                            | Minimum m <sup>2</sup><br>Required |
|-------------------------------------|------------------------------------|
| <u>Covered or Enclosed</u>          |                                    |
| Administration                      |                                    |
| Reception                           | 17                                 |
| Secretarial                         | 42                                 |
| Offices..... Director of Operations | 14                                 |
| Assistant Direction of Operations   | 13                                 |
| Food Services Manager               | 13                                 |
| Forestry Foreman                    | 13                                 |
| Construction Foreman                | 9                                  |
| Fleet Supervisor                    | 9                                  |
| Purchasing Agent                    | 9                                  |
|                                     | <u>76.....76</u>                   |
| Meeting/Training Room               | 56                                 |
| Lunch Room                          | 23                                 |
| Locker Room                         | 14                                 |
| Washroom                            | 14                                 |
| File Storage                        | 17                                 |
|                                     | <u>264 m<sup>2</sup></u>           |
| Workshops                           |                                    |
| Electrical/Plumbing/Mechanical      | 23                                 |
| Carpentry                           | 93                                 |
| Vehicle and Equipment Repair        | 279                                |
| Vehicle and Equipment Parts         | 14                                 |
| Paint Booth                         | 93                                 |
| Sign Shop                           | 93                                 |
| Greenhouse (future consideration)   | 74                                 |
|                                     | <u>669 m<sup>2</sup></u>           |



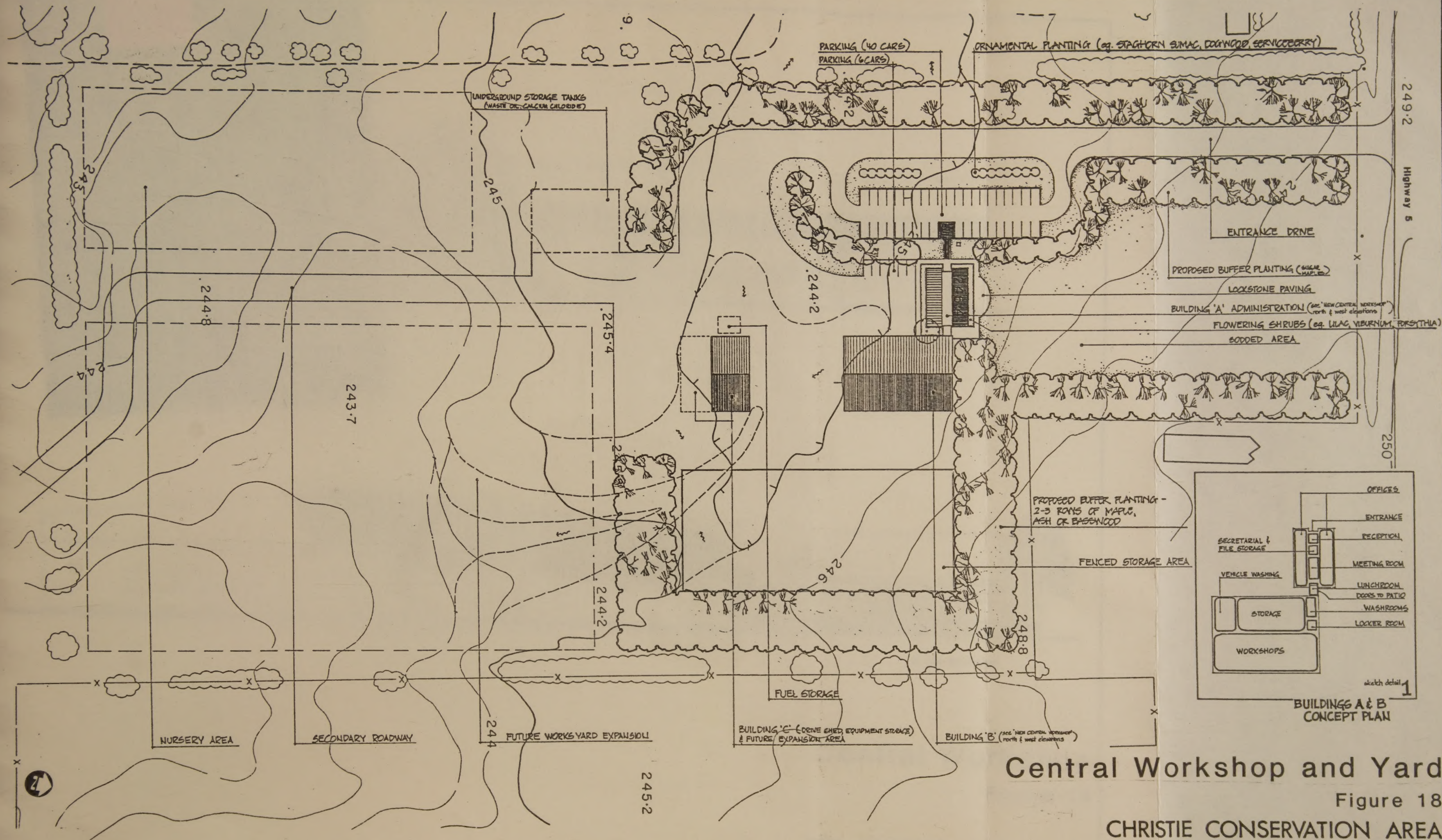
TABLE 6  
NEW CENTRAL WORKSHOP FUNCTIONAL REQUIREMENTS  
(continued)

| <u>Function</u>                         | <u>Minimum m<sup>2</sup><br/>Required</u> |
|-----------------------------------------|-------------------------------------------|
| <u>Warehouse</u>                        |                                           |
| Heated Storage                          | 56                                        |
| Dry Storage                             | 56                                        |
| Chemical Storage                        | 9                                         |
| Food Services                           | 37                                        |
| Food Freezer                            | 9                                         |
|                                         | <hr/> 167                                 |
| Roofed Drive Shed and Equipment Storage | 348                                       |
| Equipment Washing                       | 111                                       |
| <u>Outdoor or Buried</u>                |                                           |
| Gravelled and Fenced Works Yard         | 3700 m <sup>2</sup>                       |
| Nursery                                 | 7500 m <sup>2</sup>                       |
| Gas Fuel Storage                        | 30,000 gal.                               |
| Diesel Fuel Storage                     | 1,000 gal.                                |
| Waste Oil Tank                          | 1,000 gal.                                |
| Liquid Calcium Chloride Storage         | 10,000 gal.                               |
| <u>Vehicle Parking</u>                  |                                           |
| Staff                                   | 36 spaces                                 |
| Visitors                                | 4 spaces                                  |









Central Workshop and Yard

Figure 18

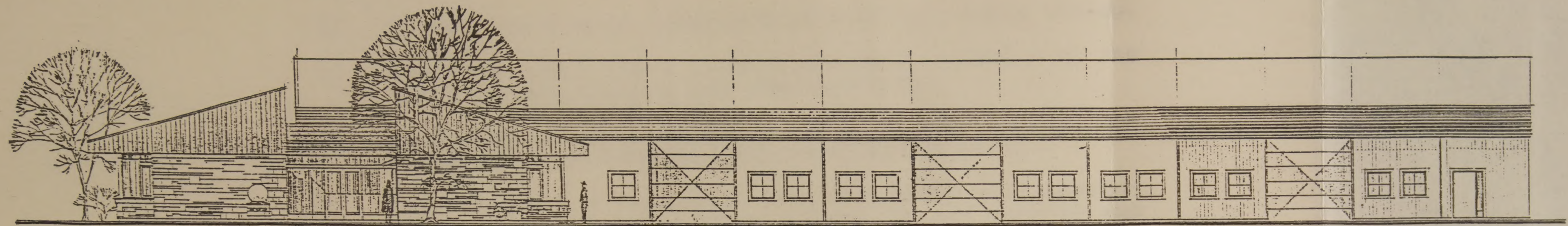
CHRISTIE CONSERVATION AREA

HAMILTON REGION CONSERVATION AUTHORITY

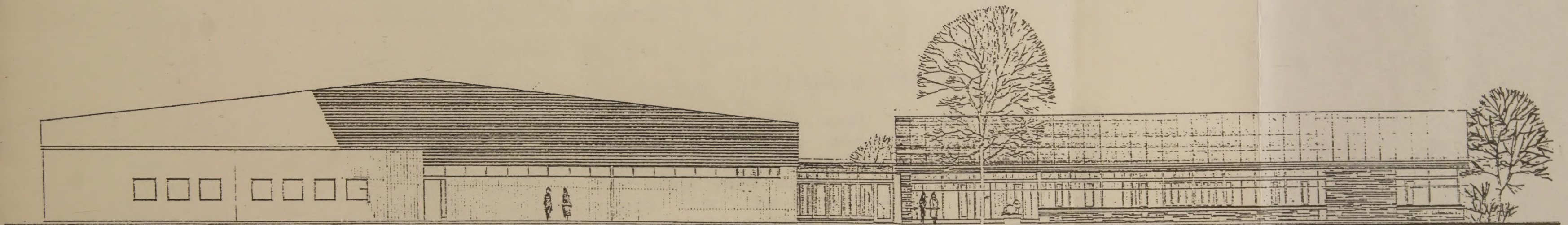








West Elevation



North Elevation

## Central Workshop

Figure 19





The main features of building "B" are:

- a) prefabricated metal construction with barn-board siding;
- b) washrooms and lockers located centrally relative to the administration function and the workshops;
- c) warehouse sector provides a noise buffer between the workshop sector and the administration building;
- d) large amount of buildings face available for exterior access doors for workshops, warehouse, and vehicle and equipment washing.

By connecting all key indoor functions under one roof, the building becomes more convenient for winter use and maximizes use of centrally located heating and water systems.

The main features of building "C" are:

- a) roof detail as with building "B";
- b) functions as drive shed and equipment storage;

Access to works yard is located west of the two main maintenance and storage buildings and is buffered from adjacent private land with tree planting. The nursery is located south of the main yard area. A secondary roadway provides direct access into the conservation area to the south. A storm water retention area is located southwest of the roadway; this area is marked for further works yard expansion.





### 11.5 Trail Ride Facilities

A trail riding facility will be operated on a concession basis from a corral and stable located south of the reservoir, east of the causeway. Accommodation would be provided for up to 25 horses. Facilities would include:

- o a roofed shelter covering 100 m<sup>2</sup>;
- o an outdoor fenced enclosure;
- o an attendant's kiosk (10 m<sup>2</sup> in area).

### 11.6 Other Facilities

- a) Outdoor Education Centre - No Change to Facilities
- b) Darnley Mill

A hiking trail will link the Mill to the Lodge to give visitors better access to the Mill as part of the range of features and facilities contained within the conservation area.

- c) Boat Launch/Boat Rental Building

The building is in good condition. Minor modifications only may be required to coordinate this building with others on site. The building trim could be painted a complementary earth tone colour.

No change is proposed to the boat launch.

- d) Water Control Weir

A concrete weir on Spencer Creek west of the Town Line Road will be built. The purpose of the weir is to





stabilize water levels in the upper portion of the reservoir and hence to develop a more permanent marsh community than is presently possible with existing water level fluctuations. A preliminary design for the weir was submitted to Ministry of Natural Resources for approval in 1975. Based on this design, a slight increase in upstream water levels can be expected with the weir in place, however, this change will be confined to existing Authority holdings at Christie.

e) Picnic Pavilion/Sports Fields

A new picnic pavilion with washrooms is located at the west end of the reservoir, near the causeway. Located near a new baseball diamond, this facility will be particularly attractive for organized group picnics.

f) Wilderness Campsite

A remote campsite for supervised groups is presently provided in the Natural Zone west of Town Line Road. Upgraded facilities will include:

- . privies;
- . one fire pit with a supply of dry firewood;
- . two waste disposal containers;
- . cleared and levelled space for up to 12 backpacking tents; and
- . three wood picnic tables.



g) Sawmill

The sawmill is to be removed because the Authority no longer uses this facility.

### 11.7 Vehicular Circulation

Walking distances have been a source of complaint from users. Many areas are not directly accessible by road. Early in the study, internal transportation systems such as a small train, horse and buggy, mini bus and tractor and wagon were considered as possible solutions to the problem.

A permanent solution, however, must be found in the design of the site and, therefore, road layout, relationship of key facilities to each other and location of parking lots were considered in the development of the Master Plan. The Master Plan incorporates the following features that address the problem of long walking distances:

- o continuous park drive;
- o more parking lots;
- o drop-off at the beach pavilion and Lodge; and
- o pedestrian bridge connecting the pavilion to the Lodge.

Post and cable barriers are proposed along all site roads to discourage road side parking.

This subsection describes the road layout near key facilities and activity areas.





The functional goal of any circulation network is to connect a series of related events or facilities in a meaningful and spatially appropriate way. The aesthetic goal is to achieve this sequential pattern with selective reference to the special characteristics of the site. This is especially important in this study area where the most important attributes of the site is its natural character.

a) Entrance Gate/Beach Pavilion (Figure 20)

The entrance sign, boulevard planting, farm buildings and gate house establish the rural character and context of the site. But the link between the gatehouse and the major activity generator and architectural feature of the site, the pool pavilion, is weak. Four alternative road realignments were considered.

Concept A is presented on Figure 20; Concepts B, C, and D are shown on Figure 21. Table 14 lists advantages and disadvantages of these four concepts.

Concept A, based on a treed circle enclosing a great lawn, is the preferred design. A linear greenway from the gatehouse to the pool pavilion intersects the circle and creates a strong visual alignment between the two major architectural features. While acknowledging that there is not a direct site line between the gatehouse and the pool pavilion, this linear relationship can be strengthened by encouraging pedestrian movement along this axis by means of a well-maintained linear grassed area. The circular space of the "great lawn" would be used for picnicking and spontaneous recreation events.

Concepts B, C and D (Figure 21) present three configurations based on a more linear and direct connection











TABLE 14  
COMPARISONS OF ENTRANCE DRIVE CONCEPTS

|               | A<br>(Located on Master Plan)                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | B/C/D<br>(Figure 21)                                                                                                                                                                                                                                                                                                                                                 |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advantages    | <ul style="list-style-type: none"> <li>. "Great Lawn" becomes a strong visual focus and serves to give the site "unique" identity</li> <li>. Arriving vehicles have already had a chance to peruse any of two parking lots for available space before proceeding to drop-off area of pool pavilion</li> <li>. Vehicles proceeding to or departing from areas other than the pool pavilion can avoid this immediate area hence reducing local traffic conjection near the drop-off area</li> </ul> | <ul style="list-style-type: none"> <li>. Strong farm entrance vernacular theme</li> <li>. Allows more uninterrupted picnic space between roadway and reservoir</li> </ul>                                                                                                                                                                                            |
| Disadvantages | <ul style="list-style-type: none"> <li>. Requires removal of one existing road segment</li> <li>. Provides less interrupted picnic space between roadway and reservoir</li> <li>. New roadway passes through poorly drained area southeast of entrance gate</li> </ul>                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>. Requires removal of two existing road segments</li> <li>. Arriving vehicles must investigate two parking lots to find space after dropping passengers at pool pavilion</li> <li>. New roadway passes through poorly drained area southeast of entrance gate</li> <li>. Relocation of the beach pavilion tile bed</li> </ul> |





between gatehouse and pool pavilion. These designs are derivatives of the traditional tree-lined farm entrance drive. All four concepts reflect the need for a convenient drop-off area north of the pool pavilion.

b) Christie Lodge

The internal road will be extended across the reservoir via the existing causeway and south of the reservoir to the new location of Christie Lodge. The total length of the road is 1500 m. Much of the road has already been cleared and gravelled. This road terminates at the Lodge parking lot.

c) New Workshop

Approximately 250 m of new two-lane gravel roadway will link the new worksyard to Highway 5. In addition, a new secondary access road will be constructed from the works yard south to the new parking lot, thus allowing direct interior access for vehicles and equipment servicing the Conservation Area.

d) East Picnic Area

A new road will provide a continuous park drive by the boat rental building, past the existing saw mill, connecting in a loop with the existing road.

e) Pond #8

The newly built handicapped fishing facility on Pond #8 will require two-way gravel roadway extension of approximately 300 m.





## 11.8 Parking

Parking lot locations and their capacity have become major planning issues at the Christie Conservation Area. Parking lot locations are, for the most part, determined by their proximity to associated events or facilities. A less obvious relationship exists when the parking lots serve dispersed activities (such as picnicking) or highly concentrated activities (such as sunbathing and swimming). These two types of activities are the highest attendance generators on the site.

Currently, parking for picnic and beach-related activities is located back from the edge of the reservoir. This allows for uninterrupted views of the reservoir and scenic south shoreline, an ideal situation for picnicking and related recreational events. However, visitors have complained of long walking distances between parking lots and the beach pavilion/central picnic area.

In spite of past attempts to balance parking capacity and demand, the weather-dependent and season-related demands of picnicking and beach-related activities have frequently exceeded existing parking capacity. Under such circumstances, visitors park on roadsides and in fields.

Table 15 summarizes existing and proposed parking lot capacities. Based on an existing capacity of 950 spaces, an additional 950 spaces are proposed throughout the Conservation Area. Of this total, there are 210 formal spaces and 425 overflow spaces to serve the beach, pool and picnic areas.

## 11.9 Trails

The proposed trail system provides access to all areas and facilities. New routes complement trails currently maintained by the Authority. In order to protect sensitive



TABLE 15  
EXISTING AND PROPOSED PARKING

| Area                         | Existing                     | Proposed | Total |
|------------------------------|------------------------------|----------|-------|
| A (Entrance Gate)            | 0                            | 12       | 12    |
| B (West Beach Picnic)        | 240                          | 210      | 450   |
| C (East Beach Picnic)        | 510*                         | 0        | 510   |
| D (Overflow)                 | 0                            | 425      | 425   |
| E (Christie Lodge)           | 0                            | 145      | 145   |
| F (New Works Yard)           | 0                            | 46       | 46    |
| G (Boat Launch/Rental)       | 100                          | 0        | 100   |
| H (Dam)                      | (Service & Bus Parking Only) |          | -     |
| I (Saw Mill)                 | 60                           | 0        | 60    |
| J (Pond #8)                  | 0                            | 12       | 12    |
| K (Wildlife Management Area) | 40                           | 60**     | 100   |
| L (Causeway)                 | 0                            | 40       | 40    |
| TOTAL                        | 950                          | 950      | 1900  |

\* The 1980 Master Plan listed 660 spaces in this parking lot.

\*\* Subject to demand.





environmental areas, raised boardwalks are proposed at specific locations to direct pedestrians. Other trails will be constructed of limestone screenings.

Given the importance of the reservoir to the site, a water-side walk is proposed around the reservoir perimeter. A pedestrian bridge will cross the reservoir to provide access between the beach and Lodge (Figure 22).

The following subsections describe key elements of the trail system.

- a) Development of Major Pathways from East and West Beach Parking Lots to the Beach Pavilion

The recommended width is 2 m; the recommended surface is compacted limestone screenings

- b) Beach Boardwalk and Pergola Lookout

The boardwalk originates at the pool pavilion's south patio and terminates at a lookout pavilion on the reservoir's north shoreline. The intent of the boardwalk is to contain and direct beach-related activities east of the pool pavilion, and to then direct circulation south across the reservoir via a pedestrian bridge.

- c) 2 m wide Boardwalk Network Between Pedestrian Bridge and Christie Lodge

This above-ground walkway and lookout will direct pedestrian traffic between the beach area and the Lodge. The sensitivity of the mature deciduous forest community along the steep slopes south of the reservoir requires careful design and construction of the walkway. Removal of large trees will be avoided. A well-designed and carefully constructed walkway (160 m long x 2 m wide)







Pedestrian Bridge

Figure 22





will offer increased interpretive opportunities for naturalists (which may take the form of information plaques at selected lookouts) as well as more casual transient traffic between beach and Lodge.

d) Winter Trails

Cross-country skiing will be promoted on all specified hiking trails as part of the winter recreation program centred at Christie Lodge. Grooming will be required on some woodland trails originating at Christie Lodge to maintain quality ski conditions where highest demand and use is anticipated. Trails in woodland situations are also more likely to offer prime snow conditions for a longer season and through periodic winter thaws; hence, there will be a greater return on maintenance investment.

Snowshoeing is less dependent on groomed surfaces or trails. Existing facilities will be adequate to meet existing demand.

e) Trail Riding

Trail riding will be confined to a new exclusive circuit developed south of the reservoir (see Master Plan) and originating at the riding stable south of the causeway. Due to potential conflicts of trail quality requirements of hikers versus horses, trail overlap has been avoided. Horse trails will also avoid seasonally wet areas and operator will be required to adhere to strict rules concerning use of unmarked trails.





f) Pond Boardwalks

A 2 m wide boardwalk is proposed for the perimeter of Fishing Ponds 1, 2, 3 and 4. This will reduce shoreline erosion and increase access. The edges of Ponds 5, 6 and 7 should remain "natural" to integrate with their wooded settings. Handicapped access is currently being constructed on Pond 8.

g) Wilderness Area (west of Townline Road)

Interpretive trails are proposed around the reservoir, west of Townline Road. Boardwalks will provide pedestrian access through wet areas. The wier, located just west of Townline road, will also provide a 3m wide pedestrian connection across the reservoir.

h) Lookout Towers

Two timber lookout towers are proposed for a scenic view of the site:

- . south side of the reservoir, east of the Lodge;
- . north side of the reservoir near the east property edge.





#### 11.10 Boating and Canoeing

The existing policy of non-motorized recreation boating is to remain. Visitors will continue to have access to the existing boat launch for rowboats, sailboats, canoes, etc.

#### 11.11 Programs

##### a) Information

The primary source of information will be a site map located immediately south of the entrance gate. Additional secondary maps and information centres will be located at:

- the foyer of the pool pavilion;
- the foyer of Christie Lodge;
- the outdoor unmanned kiosk north of the parking lot in the wildlife management area.

##### b) Education

At present the Hamilton Board of Education operates the Christie Outdoor Education Centre. The Authority plans no major facilities or activities of its own. It is expected that development of an extended network of trails, wilderness camp site and maintenance of the wildlife management area will be used in the Board of Education programs.

##### c) Natural History Interpretation

The present Community Group program offers interpretive programs to over 3000 visitors per year.



Programs are geared primarily towards authority policy and resource management. Additional themes that could be explored and/or expanded are:

- Niagara Escarpment Geology;
- Marsh and Forest Ecology;
- Aquatic Biology; and
- Cultural History.

Programs will be based on field trip situations, but if sufficient interest develops, consideration should be given to a full-time summer naturalist station at Christie Lodge.

#### 11.12 Resource Management

A Fish and Wildlife Management Plan for the site was prepared by the Ministry of Natural Resources in 1978 to direct habitat improvements over a 10 year period. Implementation of habitat improvements has taken place as part of the 1980 Master Plan.

The proposed development Plan will not interfere with current wildlife management directives. The effects of major new development are summarized:

|                                  | <u>Master Plan</u>                                                                                                                    | <u>Wildlife Management Plan</u>                                                                                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. North Shore Beach/Picnic Area | <ul style="list-style-type: none"><li>- addition of children's splash pool</li><li>- additional parking</li><li>- new roads</li></ul> | <ul style="list-style-type: none"><li>- area described as:<ul style="list-style-type: none"><li>. 70% mowed fields</li><li>. scattered pockets of natural habitat</li></ul></li></ul> |





The Master Plan will preserve existing areas of natural vegetation as recommended in the Wildlife Management Plan.

|                   | <u>Master Plan</u>                                                                                                   | <u>Wildlife Management Plan</u>                                                                                                                                                       |
|-------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Christie Lodge | <ul style="list-style-type: none"><li>- lodge</li><li>- skating rink</li><li>- snow slide</li><li>- trails</li></ul> | <ul style="list-style-type: none"><li>- area described as:<ul style="list-style-type: none"><li>. coniferous plantation</li><li>. mature hardwood forest on slope</li></ul></li></ul> |

The Master Plan incorporates the following recommendations made in the Wildlife Management Plan:

- o Selective cutting of hardwood forest.
- o Preservation of fence rows.
- o Open up pine plantation to encourage natural succession.

|                             | <u>Master Plan</u>                                                                                                                        | <u>Wildlife Management Plan</u>                                                        |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 3. Wildlife Management Zone | <ul style="list-style-type: none"><li>- group campsite</li><li>- privies</li><li>- wier</li><li>- parking area</li><li>- trails</li></ul> | <ul style="list-style-type: none"><li>- greatest potential to manage habitat</li></ul> |

The Master Plan incorporates the wier recommended in the Wildlife Management Plan to maintain water level and stabilize the shoreline to encourage nest, brood and feeding cover conditions for wildlife.

The Wildlife Management Plan also made several recommendations concerning fisheries:





- o review and assess stocking programs annually;
- o stock trout (20+ cm) for put and take fishing; and
- o undertake survey of trout ponds.

Development proposed in this Master Plan will not affect the implementation of these recommendations.



## 12. DESIGN GUIDELINES

Design guidelines were prepared to guide the detailed design of key site features in accordance with the intent and general principles upon which this master plan was completed. The design of site features should reflect the natural character of the setting. Materials that are characteristic of the site, such as wood (barnboard, split rail fencing) and limestone should be used.

This section describes guidelines to be used in the design of buildings, signage, lighting and landscape.

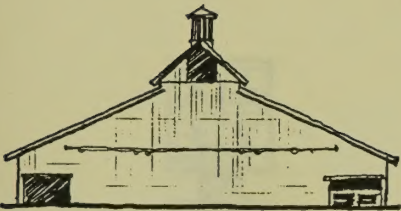
### SITE

#### Philosophical Goals and Objectives

- o Enhance and promote natural characteristics of the site.
- o Cultivate a sense of discovery of man-made and natural features.
- o Reflect the historical/cultural and heritage character of the area in buildings and landscape elements.
- o Promote the site and facilities as "destination" points; encourage a relaxed environment where users are tempted to linger (delay departure).
- o Plan for movement through the site by establishing site lines to key facilities and encouraging the experience of a variety of landscapes.







# 1. BUILDING

## a) Character

- o rustic
- o historic/rural vernacular
- o organic
- o hand-made
- o solid/massive

## b) Form

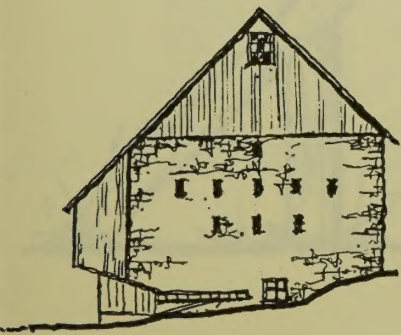
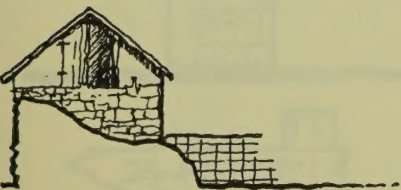
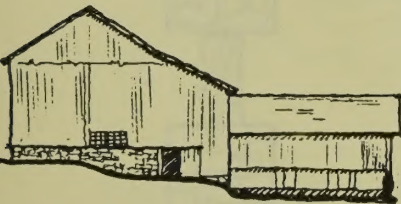
- o cuboid
- o post and beam construction
- o "log cabin"
- o visually "simple"/uncomplicated
- o rectangular/angular (not curvilinear)
- o steep roof pitch

## c) Colour

- o earth tones
- o harmonious
- o warm

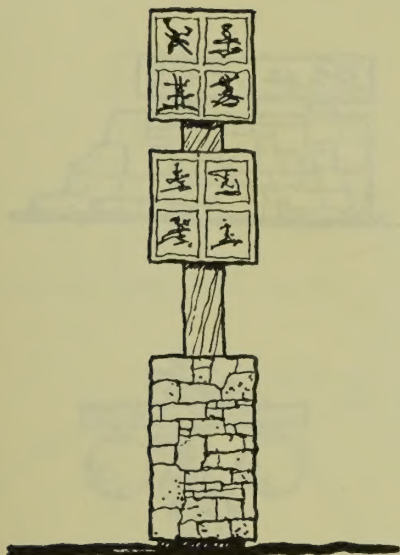
## d) Exterior Finish

- o stone
- o stained wood
- o stucco
- o barnboard









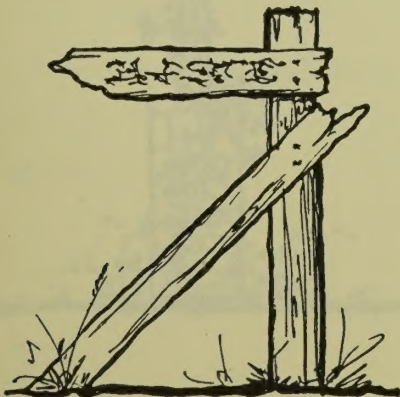
## 2. SIGNAGE

### a) Character

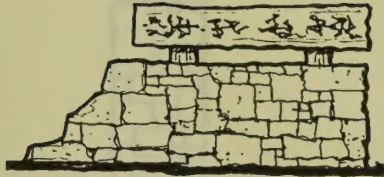
- o Clear and uncluttered messages; a well-designed, constructed and located facility will require less signage than a poorly-designed facility.
- o Themed on site character rather than animal figure given human features.
- o Use of symbols wherever possible.
- o Traditional lettering (avoid "High Tech" look).
- o "Rural" - designed for "low speed" traffic and pedestrians.
- o Consistency among all signage types throughout the site.

### b) Form

- o Boards and plaques on posts or post markers.
- o Banners may be appropriate in certain areas (e.g. children's activity areas) especially if signage is to be used in association with light standards.
- o When on buildings, signs should be designed as extensions of, or design elements within (e.g. awnings, corner sign projections).
- o Avoid loud internally-lit signs characteristic of fast food outlets - prefer externally lit signage or subdued internal lighting.







c) Colour

- o Natural colours with balanced contrasting colours for logos, letters and symbols.

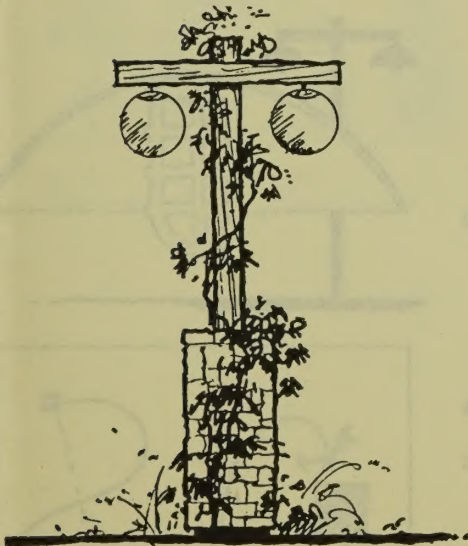
d) Materials

- o wood
- o stone
- o anodized metal
- o "real" material - honest look (e.g. brown plastic signs made to look like stained wood cheapen the character of a site)

3. LIGHTING

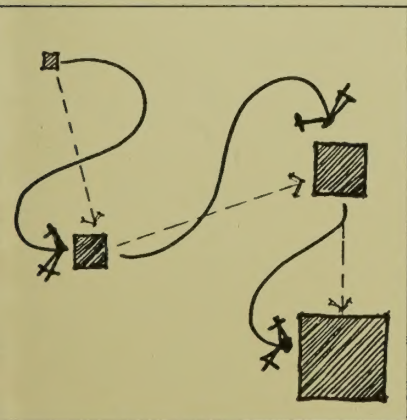
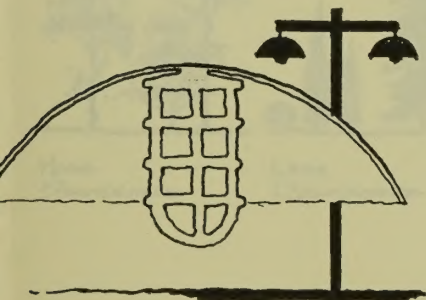
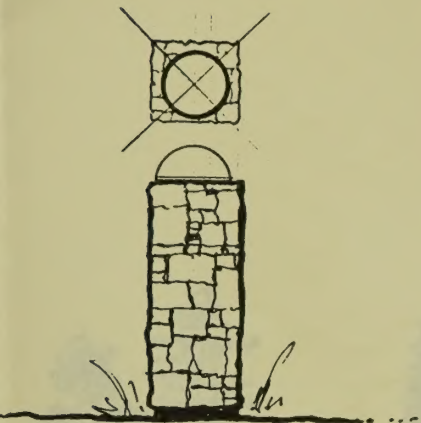
a) Character

- o Opportunity to provide a strong unifying element throughout the site with light fixtures and standards.
- o Avoid solid and heavy standards that draw too much attention to themselves.
- o Avoid period reproductions since they may evoke more historic mood than is desirable in a place that should read more or less as timeless or at least time - specific in character.









b) Form

- o Simple metal, or wood and metal.
- o No strong ornamentation.
- o As much as possible "pedestrian" in scale even when located along roadways.

c) Colour

- o Standards: "Background", muted or otherwise organic colours; avoid bright colours.
- o Light: Suggest no special treatment of conventional lighting source unless it is subtle; since most outdoor lighting will be for orientation and navigation. Maximum bright may seem desirable but avoid the "stadium light" effect.

d) Finish

- o Paint or stain (as appropriate).
- o Low maintenance.

4. LANDSCAPE

a) Circulation

- o Organize circulation routes along strong site lines between key visual elements.
- o Should proceed along long lines and graceful curves; curvilinear in character; avoid straight lines unless for boardwalks.





b) Planting

- o Indigenous species.
- o Avoid formal plant materials (e.g. blue spruce, globe cedar, mountbatton juniper).
- o Wherever possible, let natural succession occur.
- o Use plants for year-round colour, interest and variety.
- o Use plants to help control snow drifting along roads and paths.
- o Use wildflowers/native grasses to reduce long-term maintenance.
- o Use plant material that attracts wildlife e.g. sumac (*Rhus typhina*); Highbush cranberry (*Viburnum opulus*);
- o Existing plantations should be opened up to encourage natural succession.



The following are suggested plant associations for landscape treatment:

1. Upland

a) Hedgerows and Fencelines

- . highbush cranberry (*Viburnum opulus*)
- . hawthorn (*Crataegus* sp.)
- . Manitoba maple (*Acer negundo*)
- . sumac (*Rhus typhina*)
- . cedar (*Thuja occidentalis*)
- . wild grape (*Vitis* sp.)



- . virginia creeper (Parthenocissus tricuspidata)
- . dogwood (Cornus sp.)

b) Entrance Drive

- . sugar maple (Acer saccharum)
- . basswood (Tilia americana)
- . red maple (Acer rubrum)
- . beech (Fagus grandifolia)

c) South and West Forest Edges

- . sumac (Rhus typhina)
- . aspen (Populus tremuloides)
- . poplar (Populus sp.)
- . white pine (Pinus strobus)
- . dogwood (Cornus sp.)

East and North Forest Edges

- . alder (Alnus rugosa)
- . highbush cranberry (Viburnum opulus)
- . dogwood (Cornus sp.)
- . witch hazel (Hamamelis virginiana)
- . blue beech (Carpinus caroliniana)

d) Upland Forest

- . sugar maple (Acer saccharum)
- . green ash (Fraxinus pennsylvanica)
- . beech (Fagus grandifolia)
- . basswood (Tilia americana)
- . white pine (Pinus strobus)
- . eastern hemlock (Tsuga canadensis)





## 2. Riparian and Lowland

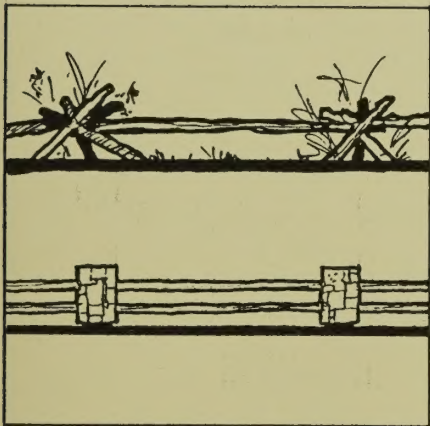
- . willow (*Salix* sp.)
- . elder (*Sambucus canadensis*)
- . alder (*Alnus rugosa*)
- . cedar (*Thuja* sp.)
- . dogwood (*Cornus* sp.)

## 3. Wetland

- . cattails
- . bullrush
- . yellow pondlily
- . horsetail rushes

### c) Barriers

- o Avoid clipped hedges in place of fences since these are too formal for most sites.
- o Fences should be compatible with buildings and rural landscape.
- o If chain link fences must be used, then should be planted with native shrubs and/or vines (e.g. wild grape, Virginia creeper).
- o Post and cable should be installed along site access roads.







### 13. FINANCIAL ANALYSIS

Many of the items noted in the Master Plan will enhance the appeal and recreational quality of the Conservation Area. Only the proposed lodge will generate incremental revenues. A detailed simulation of the potential financial performance of the Lodge (Options 1, 2 and 3) is shown in Table 16.

The total capital cost for Option #2 of the Lodge is likely to be in the order of \$500,000 excluding the costs of site development. These cost estimates are shown in more detail in the first section of Table 16.

The demand model in the second section of Table 16 shows the lodge will be an all seasons facility. However, visitor patterns to the park suggest it should be open to the public no more than four days per week offering lunch, dinner, and brunch on Sundays. This operating schedule and the forecasts of occupancy are shown in the occupancy model.

The estimated average expenditures per customer are shown in the rates per seat portion of the table. These expenditures are based on actual 1985 results for family style restaurants and snack bars as reported by the Canadian Restaurant and Foodservice Association. Sales are forecast to increase at 5% annually. This is a conservative yet realistic estimate of potential performance.

As shown, the Lodge should welcome 44,216 persons in the first year of operation. Based on current attendance, approximately one visitor in three will stop at the lodge. However, the Lodge is likely to attract new visitors to the Conservation Area, especially if the facilities, service, food and beverages are reasonably high quality. Assuming a quality operation, the Lodge might be expected to increase visitorship to the Conservation Area by between 5% and 15% annually. The actual increase will be an accurate measure of the quality of the operation.



The major expenses are also analyzed. These estimates are based on the results of quality family style restaurants as reported by the Canadian Restaurant and Foodservice Association. Brief comments on each expense category follows:

- o Cost of Goods Sold - Represents the estimated costs of the foods and beverages sold exclusive of any labour cost.
- o Payroll and Benefits - Represents the estimated labour costs associated with operating the facility.
- o Direct Operating Expenses - Those expenses incurred during operation not specified elsewhere.
- o Music and Entertainment - The average cost of live or recorded music exclusive of appearances by specialty performers.
- o Advertising and Promotions - An allocation for special promotion of this facility.
- o Utilities - An estimate based on industry norms.
- o Administrative and General - An estimate of the annual cost of administrative support systems and materials.
- o Repairs and Maintenance - An allocation based on industry norms for upkeep and renewal.

The Lodge is forecast to generate a profit equal to 19.7% of total revenues from its first year of operation. Since no increase in occupancy has been forecast, this profit margin is expected to remain relatively stable. Naturally, increased occupancy and profitable operation on other days could increase the margin.





OPTION 1: THE LODGE

CAPITAL COSTS

A. BUILDING COSTS

| Component                               | Size                     | Sq. Footage |
|-----------------------------------------|--------------------------|-------------|
| Foyer                                   | 20' by 15'               | 300         |
| Dining room<br>100 person capacity      | 40' by 40'               | 1600        |
| Lounge/Snack Bar<br>120 person capacity | 40' by 48'               | 1900        |
| Washrooms (4)                           | 2(8' by 12')             | 192         |
| Meeting room<br>60 person capacity      | 24' by 40'               | 960         |
| Kitchen and pantry                      | 15% of sum of preceeding | 743         |
| Storage                                 | 8' by 20'                | 160         |
| Corridors, access, etc.                 | 5% of sum of preceeding  | 293         |
|                                         |                          | 6147.75     |
| BUILDING COST                           | 6133 @ \$88.55 sq.ft.    | \$543,077   |
| CONTINGENCIES                           | \$543,077 @ 15.0%        | \$81,462    |
|                                         |                          | \$624,539   |
| ARCHITECT                               | \$624,539 @ 10.0%        | \$62,454    |
| TOTAL BUILDING COST                     |                          | \$686,993   |

OPTION 1:  
The Lodge





# B. INTERIOR COSTS

|                            |              |           |           |
|----------------------------|--------------|-----------|-----------|
| Bar                        | \$200 l.f.   | 20 sq.ft. | \$4,000   |
| Fireplace                  | 2 @          | 1300 each | \$2,600   |
| Chimney                    | 2 30' by 70' |           | \$20,000  |
| Refrigeration<br>(walk in) |              |           | \$12,000  |
| Kitchen                    |              |           | \$75,000  |
|                            |              |           | -----     |
|                            |              |           | \$113,600 |

## FIXTURES AND FURNISHINGS

|                                                       |               |               |             |
|-------------------------------------------------------|---------------|---------------|-------------|
| Foyer, dining room,<br>lounge/snack bar,<br>mtg room) | 4780 sq.ft. @ | \$40 sq.ft.   | \$191,200   |
| Washrooms                                             | 4 @           | \$30,000 each | \$120,000   |
|                                                       |               |               | -----       |
| INTERIOR COSTS                                        |               |               | \$424,800   |
| CONTINGENCIES                                         | \$424,800 @   | 15%           | \$63,720    |
|                                                       |               |               | -----       |
|                                                       |               |               | \$488,520   |
| DESIGN                                                | \$488,520 @   | 10%           | \$48,852    |
|                                                       |               |               | -----       |
| TOTAL INTERIOR COSTS                                  |               |               | \$537,372   |
|                                                       |               |               | -----       |
| TOTAL CAPITAL COSTS<br>(excluding site development)   |               |               | \$1,224,365 |

OPTION 1:  
The Lodge



# DEMAND MODEL

| SEASON   | START  | FINISH | DAYS | WEEKS | WEEKENDS | WEEKDAYS |     |
|----------|--------|--------|------|-------|----------|----------|-----|
| SUMMER   | 15-May | 15-Sep |      | 123   | 18       | 35       | 88  |
| SHOULDER | 15-Sep | 16-Dec |      | 92    | 13       | 26       | 66  |
|          | 15-Apr | 15-May |      | 30    | 4        | 9        | 21  |
|          |        |        |      | 122   | 17       | 35       | 87  |
| WINTER   | 16-Dec | 14-Apr |      | 120   | 17       | 34       | 86  |
|          |        |        |      | 365   | 52       | 104      | 261 |

OPTION 1:  
The Lodge





| OCCUPANCY      |             | BKFAST          | LUNCH       | DINNER           | BRUNCH |              |
|----------------|-------------|-----------------|-------------|------------------|--------|--------------|
| SUMMER         | DINING ROOM | Thurs           |             |                  | 50%    |              |
|                |             | Fri             |             |                  | 60%    |              |
|                |             | Sat             |             | 50%              | 65%    |              |
|                |             | Sun             |             |                  | 65%    | 75%          |
|                | LOUNGE      | Thurs           |             |                  | 50%    |              |
|                |             | Fri             |             |                  | 60%    |              |
|                |             | Sat             |             | 50%              | 65%    |              |
|                |             | Sun             |             |                  | 65%    |              |
|                | SNACK BAR   | Thurs           |             |                  | 50%    |              |
|                |             | Fri             |             |                  | 60%    |              |
|                |             | Sat             |             | 50%              | 65%    |              |
|                |             | Sun             |             |                  | 65%    |              |
| SHOULDER       | DINING ROOM | Fri             |             |                  | 40%    |              |
|                |             | Sat             |             | 40%              | 50%    |              |
|                |             | Sun             |             |                  | 60%    | 60%          |
|                |             |                 | LOUNGE      | Fri              |        |              |
| Sat            |             |                 |             | 40%              | 50%    |              |
| Sun            |             |                 |             |                  | 60%    |              |
|                | SNACK BAR   |                 |             | Fri              |        |              |
|                |             | Sat             |             | 50%              | 50%    |              |
|                |             | Sun             |             |                  | 60%    | 50%          |
|                |             | WINTER          | DINING ROOM | Fri              |        |              |
| Sat            |             |                 |             | 40%              | 60%    |              |
| Sun            |             |                 |             |                  | 60%    | 60%          |
|                | LOUNGE      |                 |             | Fri              |        |              |
|                |             | Sat             |             | 40%              | 50%    |              |
|                |             | Sun             |             |                  | 60%    |              |
|                |             |                 | SNACK BAR   | Fri              |        |              |
| Sat            |             |                 |             | 40%              | 50%    |              |
| Sun            |             |                 |             |                  | 60%    | 50%          |
| RATES PER SEAT |             |                 |             | AVG. EXPENDITURE |        | NO. OF SEATS |
| DINING ROOM    |             | \$11.11 /PERSON |             | 100              |        |              |
| LOUNGE         |             | \$6.60 /PERSON  |             | 120              |        |              |
| SNACK BAR      |             | \$5.75 /PERSON  |             | 60               |        |              |

| OCCUPANCY RATES |             | BKFAST      | LUNCH | DINNER | BRUNCH | NO. OF PERS |      |
|-----------------|-------------|-------------|-------|--------|--------|-------------|------|
| SUMMER          | DINING ROOM | 0           | 0     | 679    | 0      |             |      |
|                 |             | 0           | 0     | 1054   | 0      |             |      |
|                 |             | 0           | 879   | 1142   | 0      |             |      |
|                 |             | 0           | 0     | 1142   | 1318   |             |      |
|                 | LOUNGE      | 0           | 879   | 4217   | 1318   | 6414        |      |
|                 |             | 0           | 0     | 1054   | 0      |             |      |
|                 |             | 0           | 0     | 1265   | 0      |             |      |
|                 |             | 0           | 1054  | 1371   | 0      |             |      |
|                 |             | 0           | 0     | 1371   | 0      |             |      |
|                 |             | 0           | 1054  | 5061   | 0      | 6115        |      |
|                 |             | 0           | 0     | 527    | 0      |             |      |
|                 |             | 0           | 0     | 633    | 0      |             |      |
|                 | SNACK BAR   | 0           | 527   | 685    | 0      |             |      |
|                 |             | 0           | 0     | 685    | 0      |             |      |
|                 |             | 0           | 527   | 2530   | 0      | 3057        |      |
|                 |             | 0           | 0     | 697    | 0      |             |      |
| SHOULDER        | DINING ROOM | 0           | 697   | 871    | 0      |             |      |
|                 |             | 0           | 0     | 1046   | 1046   |             |      |
|                 |             | 0           | 1224  | 5145   | 1046   | 7415        |      |
|                 |             | 0           | 0     | 0      | 0      |             |      |
|                 | LOUNGE      | 0           | 837   | 1046   | 0      |             |      |
|                 |             | 0           | 0     | 627    | 0      |             |      |
|                 |             | 0           | 837   | 1673   | 0      | 2510        |      |
|                 |             | 0           | 0     | 0      | 0      |             |      |
|                 | SNACK BAR   | 0           | 523   | 523    | 0      |             |      |
|                 |             | 0           | 0     | 627    | 523    |             |      |
|                 |             | 0           | 1359  | 3451   | 523    | 5333        |      |
|                 |             | 0           | 0     | 0      | 0      |             |      |
|                 | WINTER      | DINING ROOM | 0     | 686    | 857    | 0           |      |
|                 |             |             | 0     | 0      | 1029   | 1029        |      |
|                 |             |             | 0     | 686    | 1886   | 1029        | 3600 |
|                 |             |             | 0     | 0      | 0      | 0           |      |
| LOUNGE          |             | 0           | 823   | 1029   | 0      |             |      |
|                 |             | 0           | 0     | 1234   | 0      |             |      |
|                 |             | 0           | 823   | 2263   | 0      | 3086        |      |
|                 |             | 0           | 0     | 0      | 0      |             |      |
| SNACK BAR       |             | 0           | 411   | 514    | 0      |             |      |
|                 |             | 0           | 0     | 617    | 514    |             |      |
|                 |             | 0           | 1509  | 4149   | 1029   | 6686        |      |
|                 |             |             |       |        |        |             |      |

OPTION 1:  
The Lodge





| INCOME STATEMENT          |          |             | NO. OF PERSONS | YEAR           | 1         | 2         | 3         | 4         | 5         |
|---------------------------|----------|-------------|----------------|----------------|-----------|-----------|-----------|-----------|-----------|
| -----                     |          |             |                |                |           |           |           |           |           |
| SALES                     |          |             |                |                |           |           |           |           |           |
| -----                     |          |             |                |                |           |           |           |           |           |
| Fd & bev                  | Summer   | Dining room | 6414           | \$11.11/pers   | \$71,260  | \$74,823  | \$78,564  | \$82,492  | \$86,616  |
|                           |          | Lounge      | 6115           | \$6.60/pers    | \$40,359  | \$42,377  | \$44,496  | \$46,721  | \$49,057  |
|                           |          | Snack Bar   | 3057           | \$5.75/pers    | \$17,578  | \$18,457  | \$19,379  | \$20,348  | \$21,366  |
|                           | Shoulder | Dining room | 7415           | \$11.11/pers   | \$82,381  | \$86,500  | \$90,825  | \$95,366  | \$100,134 |
|                           |          | Lounge      | 2510           | \$6.60/pers    | \$16,566  | \$17,394  | \$18,264  | \$19,177  | \$20,136  |
|                           |          | Snack Bar   | 5333           | \$5.75/pers    | \$30,665  | \$32,198  | \$33,808  | \$35,498  | \$37,273  |
|                           | Winter   | Dining room | 3600           | \$11.11/pers   | \$39,996  | \$41,996  | \$44,096  | \$46,300  | \$48,615  |
|                           |          | Lounge      | 3086           | \$6.60/pers    | \$20,368  | \$21,386  | \$22,455  | \$23,578  | \$24,757  |
|                           |          | Snack Bar   | 6686           | \$5.75/pers    | \$38,445  | \$40,367  | \$42,385  | \$44,504  | \$46,730  |
| TOTAL                     |          |             | 44216          |                | \$357,616 | \$375,497 | \$394,271 | \$413,985 | \$434,684 |
| -----                     |          |             |                |                |           |           |           |           |           |
| EXPENSES                  |          | RATE        | BASIS          |                |           |           |           |           |           |
| -----                     |          |             |                |                |           |           |           |           |           |
| Cost of Goods Sold        |          |             |                |                |           |           |           |           |           |
| Food                      |          |             | 32.7%          | tot food sales | \$106,696 | \$112,031 | \$117,633 | \$123,514 | \$129,690 |
| Beverages                 |          |             | 40.8%          | tot bev sales  | \$12,781  | \$13,421  | \$14,092  | \$14,796  | \$15,536  |
| Payroll and benefits      |          |             | 30.0%          | tot sales      | \$107,285 | \$112,649 | \$118,281 | \$124,195 | \$130,405 |
| Direct Operating Expenses |          |             | 5.6%           | tot sales      | \$20,026  | \$21,028  | \$22,079  | \$23,183  | \$24,342  |
| Music and Entertainment   |          |             | 1.9%           | tot sales      | \$6,794   | \$7,134   | \$7,490   | \$7,865   | \$8,258   |
| Advert & Promo            |          |             | 2.5%           | tot sales      | \$8,940   | \$9,386   | \$9,856   | \$10,349  | \$10,866  |
| Utilities                 |          |             | 2.8%           | tot sales      | \$10,012  | \$10,513  | \$11,039  | \$11,590  | \$12,170  |
| Admin & General           |          |             | 1.7%           | tot sales      | \$6,079   | \$6,383   | \$6,702   | \$7,037   | \$7,389   |
| Repairs & Maint           |          |             | 2.3%           | tot sales      | \$8,224   | \$8,636   | \$9,067   | \$9,521   | \$9,997   |
| -----                     |          |             |                |                |           |           |           |           |           |
| TOTAL EXPENSES            |          |             |                |                | \$286,838 | \$301,180 | \$316,239 | \$332,051 | \$348,654 |
| -----                     |          |             |                |                |           |           |           |           |           |
| OPERATING PROFIT          |          |             |                |                | \$70,778  | \$74,317  | \$78,032  | \$81,934  | \$86,031  |
| -----                     |          |             |                |                |           |           |           |           |           |
| PROFIT MARGIN             |          |             |                |                | 19.8%     | 19.8%     | 19.8%     | 19.8%     | 19.8%     |
| =====                     |          |             |                |                |           |           |           |           |           |
| food as % of total sales  |          |             |                |                | 0.9124    |           |           |           |           |

OPTION 1:  
The Lodge



OPTION 2: CAFE CHRISTIE

CAPITAL COSTS

A. BUILDING COSTS

| Component                            | Size             | Sq. Footage |
|--------------------------------------|------------------|-------------|
| Foyer                                | 8' by 10'        | 80          |
| Cafe/snack bar<br>60 person capacity | 24' by 40'       | 960         |
| Lounge<br>40 person capacity         | 20' by 32'       | 640         |
| Washrooms (2)                        | 8' by 12'        | 96          |
| Kitchen and pantry                   | 15% of preceding | 266         |
| Storage                              | 8' by 10'        | 80          |
| Corridors, access, etc.              | 5% of preceding  | 106         |
|                                      |                  | 2228        |

|               |        |                |           |
|---------------|--------|----------------|-----------|
| BUILDING COST | 2228 @ | \$88.55 sq.ft. | \$197,289 |
|---------------|--------|----------------|-----------|

|           |        |             |          |
|-----------|--------|-------------|----------|
| DECK COST | 1600 @ | \$15 sq.ft. | \$24,000 |
|-----------|--------|-------------|----------|

\$221,289

|               |             |     |          |
|---------------|-------------|-----|----------|
| CONTINGENCIES | \$221,289 @ | 15% | \$33,193 |
|---------------|-------------|-----|----------|

\$254,483

|           |             |       |          |
|-----------|-------------|-------|----------|
| ARCHITECT | \$254,483 @ | 10.0% | \$25,448 |
|-----------|-------------|-------|----------|

|                     |  |  |           |
|---------------------|--|--|-----------|
| TOTAL BUILDING COST |  |  | \$279,931 |
|---------------------|--|--|-----------|

OPTION 2 :  
Cafe Christie





## B. INTERIOR COSTS

|                             |              |           |                   |
|-----------------------------|--------------|-----------|-------------------|
| Bar                         | \$200 l.f.   | 20 sq.ft. | \$4,000           |
| Fireplace                   | 1 @          | 1300 each | \$1,300           |
| Chimney                     | 2 30' by 70' |           | \$20,000          |
| Refrigeration<br>(walk in)  |              |           | \$8,000           |
| Kitchen (open to customers) |              |           | \$40,000          |
|                             |              |           | -----<br>\$73,300 |

## FIXTURES AND FURNISHINGS

|                                  |               |             |          |
|----------------------------------|---------------|-------------|----------|
| Foyer, cafe<br>lounge, snack bar | 1680 sq.ft. @ | \$35 sq.ft. | \$58,800 |
| Deck Furniture                   |               |             | \$13,000 |
| Washrooms                        |               |             | \$30,000 |
|                                  |               |             | -----    |

|                |  |  |           |
|----------------|--|--|-----------|
| INTERIOR COSTS |  |  | \$175,100 |
|----------------|--|--|-----------|

|               |             |     |                    |
|---------------|-------------|-----|--------------------|
| CONTINGENCIES | \$175,100 @ | 15% | \$26,265           |
|               |             |     | -----<br>\$201,365 |

|        |             |     |          |
|--------|-------------|-----|----------|
| DESIGN | \$201,365 @ | 10% | \$20,137 |
|        |             |     | -----    |

|                      |  |  |           |
|----------------------|--|--|-----------|
| TOTAL INTERIOR COSTS |  |  | \$221,502 |
|----------------------|--|--|-----------|

|                                                     |  |  |           |
|-----------------------------------------------------|--|--|-----------|
| TOTAL CAPITAL COSTS<br>(excluding site development) |  |  | \$501,433 |
|-----------------------------------------------------|--|--|-----------|

OPTION 2 :  
Cafe Christie





# DEMAND MODEL

| SEASON   | START  | FINISH | DAYS | WEEKS | WEEKENDS | WEEKDAYS |
|----------|--------|--------|------|-------|----------|----------|
| SUMMER   | 15-May | 15-Sep |      | 123   | 18       | 35       |
| SHOULDER | 15-Sep | 16-Dec |      | 92    | 13       | 26       |
|          | 15-Apr | 15-May |      | 30    | 4        | 9        |
|          |        |        |      | 122   | 17       | 35       |
| WINTER   | 16-Dec | 14-Apr |      | 120   | 17       | 34       |
|          |        |        |      | 365   | 52       | 104      |

OPTION 2 :  
Cafe Christie



| OCCUPANCY      |            |                    |        |              |                       | OCCUPANCY RATES |            |        |       |        |  |      |  |  |
|----------------|------------|--------------------|--------|--------------|-----------------------|-----------------|------------|--------|-------|--------|--|------|--|--|
|                |            |                    | BKFAST | LUNCH        | DINNER                |                 |            | BKFAST | LUNCH | DINNER |  |      |  |  |
| SUMMER         | CAFE       | Monday             | 251    | 251          | 301                   | SUMMER          | CAFE       | 264    | 264   | 316    |  |      |  |  |
|                |            | Tuesday            | 251    |              | 301                   |                 |            | 264    | 264   | 316    |  |      |  |  |
|                |            | Wednesday          | 301    | 301          | 351                   |                 |            | 316    | 316   | 369    |  |      |  |  |
|                |            | Thurs              | 401    | 401          | 501                   |                 |            | 422    | 422   | 527    |  |      |  |  |
|                |            | Fri                | 501    | 501          | 601                   |                 |            | 527    | 527   | 633    |  |      |  |  |
|                |            | Sat                | 601    | 601          | 551                   |                 |            | 633    | 633   | 580    |  |      |  |  |
|                |            | Sun                | 501    | 701          | 501                   |                 |            | 527    | 738   | 527    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 2952   | 3163  | 3268   |  | 9383 |  |  |
|                | LOUNGE     | Monday             |        |              | 301                   |                 | LOUNGE     | 0      | 0     | 211    |  |      |  |  |
|                |            | Tuesday            |        |              | 301                   |                 |            | 0      | 0     | 211    |  |      |  |  |
|                |            | Wednesday          |        | 301          | 351                   |                 |            | 0      | 211   | 246    |  |      |  |  |
|                |            | Thurs              |        | 401          | 501                   |                 |            | 0      | 281   | 351    |  |      |  |  |
|                |            | Fri                |        | 501          | 601                   |                 |            | 0      | 351   | 422    |  |      |  |  |
|                |            | Sat                |        | 601          | 551                   |                 |            | 0      | 422   | 387    |  |      |  |  |
|                |            | Sun                |        | 601          | 501                   |                 |            | 0      | 422   | 351    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 0      | 1687  | 2179   |  | 3866 |  |  |
|                | SNACK BAR  | Monday             |        |              | 201                   |                 | SNACK BAR  | 0      | 0     | 351    |  |      |  |  |
|                |            | Tuesday            |        |              | 201                   |                 |            | 0      | 0     | 351    |  |      |  |  |
|                |            | Wednesday          |        | 301          | 201                   |                 |            | 0      | 527   | 351    |  |      |  |  |
|                |            | Thurs              |        | 401          | 101                   |                 |            | 0      | 703   | 176    |  |      |  |  |
|                |            | Fri                |        | 501          | 101                   |                 |            | 0      | 879   | 176    |  |      |  |  |
|                |            | Sat                |        | 501          | 151                   |                 |            | 0      | 879   | 264    |  |      |  |  |
|                |            | Sun                |        | 501          | 151                   |                 |            | 0      | 879   | 264    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 0      | 3866  | 1933   |  | 5799 |  |  |
|                | GROUP ROOM | Fri                |        |              | 301 of available time |                 | GROUP ROOM | 5      |       |        |  |      |  |  |
|                |            | Sat                |        |              | 401 of available time |                 |            | 7      |       |        |  |      |  |  |
|                |            | Sun                |        |              | 601 of available time |                 |            | 11     |       |        |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 23     |       |        |  |      |  |  |
| SHOULDER       | CAFE       | Fri                |        |              | 401                   | SHOULDER        | CAFE       | 0      | 418   | 0      |  |      |  |  |
|                |            | Sat                |        | 401          | 501                   |                 |            | 418    | 523   | 0      |  |      |  |  |
|                |            | Sun                |        |              | 601                   |                 |            | 0      | 627   | 627    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 418    | 1569  | 627    |  | 2614 |  |  |
|                | LOUNGE     | Fri                |        |              | 401                   |                 | LOUNGE     | 0      | 279   | 0      |  |      |  |  |
|                |            | Sat                |        | 401          | 501                   |                 |            | 279    | 349   | 0      |  |      |  |  |
|                |            | Sun                |        |              | 601                   |                 |            | 0      | 418   | 418    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 279    | 1046  | 418    |  | 1743 |  |  |
|                | SNACK BAR  | Fri                |        |              | 401                   |                 | SNACK BAR  | 0      | 279   | 0      |  |      |  |  |
|                |            | Sat                |        | 401          | 501                   |                 |            | 279    | 349   | 0      |  |      |  |  |
|                |            | Sun                |        |              | 601                   |                 |            | 0      | 418   | 418    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 279    | 1046  | 418    |  | 1743 |  |  |
|                | GROUP ROOM | Fri                |        |              | 301 of available time |                 | GROUP ROOM | 5      |       |        |  |      |  |  |
|                |            | Sat                |        |              | 401 of available time |                 |            | 7      |       |        |  |      |  |  |
|                |            | Sun                |        |              | 601 of available time |                 |            | 10     |       |        |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 23     |       |        |  |      |  |  |
| WINTER         | CAFE       | Fri                |        |              | 401                   | WINTER          | CAFE       | 0      | 411   | 0      |  |      |  |  |
|                |            | Sat                |        | 401          | 501                   |                 |            | 411    | 514   | 0      |  |      |  |  |
|                |            | Sun                |        |              | 601                   |                 |            | 0      | 617   | 617    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 411    | 1543  | 617    |  | 2571 |  |  |
|                | LOUNGE     | Fri                |        |              | 401                   |                 | LOUNGE     | 0      | 274   | 0      |  |      |  |  |
|                |            | Sat                |        | 401          | 501                   |                 |            | 274    | 343   | 0      |  |      |  |  |
|                |            | Sun                |        |              | 601                   |                 |            | 0      | 411   | 411    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 274    | 1029  | 411    |  | 1714 |  |  |
|                | SNACK BAR  | Fri                |        |              | 401                   |                 | SNACK BAR  | 0      | 274   | 0      |  |      |  |  |
|                |            | Sat                |        | 401          | 501                   |                 |            | 274    | 343   | 0      |  |      |  |  |
|                |            | Sun                |        |              | 601                   |                 |            | 0      | 411   | 411    |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 274    | 1029  | 411    |  | 1714 |  |  |
|                | GROUP ROOM | Fri                |        |              | 301 of available time |                 | GROUP ROOM | 5      |       |        |  |      |  |  |
|                |            | Sat                |        |              | 401 of available time |                 |            | 7      |       |        |  |      |  |  |
|                |            | Sun                |        |              | 601 of available time |                 |            | 10     |       |        |  |      |  |  |
|                |            |                    |        |              |                       |                 |            | 22     |       |        |  |      |  |  |
| RATES PER SEAT |            | AVG. EXPENDITURE   |        | NO. OF SEATS |                       |                 |            |        |       |        |  |      |  |  |
| CAFE/SNACK BAR |            | \$5.75 /PERSON     |        | 40           |                       |                 |            |        |       |        |  |      |  |  |
| LOUNGE         |            | \$6.60 /PERSON     |        | 40           |                       |                 |            |        |       |        |  |      |  |  |
| DECK           |            | \$5.75 /PERSON     |        | 100          |                       |                 |            |        |       |        |  |      |  |  |
| GROUP ROOM     |            | \$100.00 /OCCASION |        |              |                       |                 |            |        |       |        |  |      |  |  |

OPTION 2 :  
Cafe Christie





| INCOME STATEMENT          |          |            | NO. OF PERSONS | RATE           | 1         | 2         | 3         | 4         | 5         |
|---------------------------|----------|------------|----------------|----------------|-----------|-----------|-----------|-----------|-----------|
| -----                     |          |            |                |                |           |           |           |           |           |
| SALES                     |          |            |                |                |           |           |           |           |           |
| Fd & bev                  | Summer   | Cafe       | 9383           | \$5.75/pers    | \$53,952  | \$56,650  | \$59,482  | \$62,456  | \$65,579  |
|                           |          | Lounge     | 3866           | \$6.60/pers    | \$25,516  | \$26,791  | \$28,131  | \$29,537  | \$31,014  |
|                           |          | Deck       | 5799           | \$5.75/pers    | \$33,344  | \$35,011  | \$36,762  | \$38,600  | \$40,530  |
|                           |          | Group room | 23 occ.        | \$100/occ      | \$2,300   | \$2,415   | \$2,536   | \$2,663   | \$2,796   |
| -----                     |          |            |                |                |           |           |           |           |           |
|                           | Shoulder | Cafe       | 2614           | \$5.75/pers    | \$15,031  | \$15,782  | \$16,571  | \$17,400  | \$18,270  |
| Lounge                    |          | 1743       | \$6.60/pers    | \$11,504       | \$12,079  | \$12,683  | \$13,317  | \$13,983  |           |
| Deck                      |          | 1743       | \$5.75/pers    | \$10,022       | \$10,523  | \$11,050  | \$11,602  | \$12,182  |           |
| Group room                |          | 23 occ.    | \$100/occ      | \$2,300        | \$2,415   | \$2,536   | \$2,663   | \$2,796   |           |
| -----                     |          |            |                |                |           |           |           |           |           |
|                           | Winter   | Cafe       | 2614           | \$5.75/pers    | \$15,031  | \$15,782  | \$16,571  | \$17,400  | \$18,270  |
| Lounge                    |          | 1743       | \$6.60/pers    | \$11,504       | \$12,079  | \$12,683  | \$13,317  | \$13,983  |           |
| Group room                |          | 23 occ.    | \$100/occ      | \$2,300        | \$2,415   | \$2,536   | \$2,663   | \$2,796   |           |
| -----                     |          |            |                |                |           |           |           |           |           |
| TOTAL                     |          |            |                |                | \$182,803 | \$191,943 | \$201,540 | \$211,617 | \$222,198 |
| -----                     |          |            |                |                |           |           |           |           |           |
| EXPENSES                  |          |            | RATE           | BASIS          |           |           |           |           |           |
| -----                     |          |            |                |                |           |           |           |           |           |
| Cost of Goods Sold        |          |            |                |                |           |           |           |           |           |
|                           |          | Food       | 32.7%          | tot food sales | \$54,607  | \$57,337  | \$60,204  | \$63,214  | \$66,375  |
|                           |          | Beverages  | 40.8%          | tot bev sales  | \$6,538   | \$6,865   | \$7,209   | \$7,569   | \$7,947   |
| Payroll and benefits      |          |            |                |                | 30.0%     | tot sales | \$54,841  | \$57,583  | \$60,462  |
| Direct Operating Expenses |          |            |                |                | 5.6%      | tot sales | \$10,200  | \$10,710  | \$11,246  |
| Music and Entertainment   |          |            |                |                | 1.9%      | tot sales | \$3,552   | \$3,730   | \$3,917   |
| Advert & Promo            |          |            |                |                | 2.5%      | tot sales | \$4,626   | \$4,857   | \$5,100   |
| Utilities                 |          |            |                |                | 2.8%      | tot sales | \$5,236   | \$5,498   | \$5,773   |
| Admin & General           |          |            |                |                | 1.7%      | tot sales | \$3,090   | \$3,244   | \$3,407   |
| Repairs & Maint           |          |            |                |                | 2.3%      | tot sales | \$4,330   | \$4,546   | \$4,773   |
| -----                     |          |            |                |                |           |           |           |           |           |
| TOTAL EXPENSES            |          |            |                |                | \$147,020 | \$154,371 | \$162,090 | \$170,194 | \$178,704 |
| -----                     |          |            |                |                |           |           |           |           |           |
| OPERATING PROFIT          |          |            |                |                | \$35,783  | \$37,572  | \$39,450  | \$41,423  | \$43,494  |
| -----                     |          |            |                |                |           |           |           |           |           |
| PROFIT MARGIN             |          |            |                |                | 19.6%     | 19.6%     | 19.6%     | 19.6%     | 19.6%     |
| =====                     |          |            |                |                |           |           |           |           |           |
|                           |          |            |                |                | \$185,025 | \$194,276 | \$203,990 | \$214,189 | \$224,899 |
| food as % of total sal    |          |            |                |                | 0.9124    |           |           |           |           |

OPTION 2 :  
Cafe Christie





# OPTION 3: CAFE CHRISTIE II

## CAPITAL COSTS

### A. BUILDING COSTS

| Component                                  | Size                  | Sq. Footage |
|--------------------------------------------|-----------------------|-------------|
| Foyer                                      | 8 by 10               | 80          |
| Dining room<br>80 person capacity          | 32' by 40'            | 1280        |
| Lounge/Snack Bar<br>80 person capacity     | 32 by 40'             | 1280        |
| Group Gathering Room<br>40 person capacity | 20' by 32'            | 640         |
| Washrooms (2)                              | 2(8' by 12')          | 192         |
| Kitchen and pantry                         | 15' by 20'            | 300         |
| Group kitchen                              | 10' by 15'            | 250         |
| Storage                                    | 5% of preceding       | 201         |
| Corridors, access, etc.                    | 5% of preceding       | 211         |
|                                            |                       | 4434        |
| Deck<br>60 person capacity                 |                       | 960         |
|                                            |                       | 5394        |
| BUILDING COST                              | 4434 @ \$88.55 sq.ft. | \$392,631   |
| DECK COST                                  | 960 @ \$15 sq.ft.     | \$14,400    |
|                                            |                       | \$407,031   |
| CONTINGENCIES                              | \$407,031 @ 15%       | \$61,055    |
|                                            |                       | \$468,085   |
| ARCHITECT                                  | \$468,085 @ 10.0%     | \$46,809    |
| TOTAL BUILDING COST                        |                       | \$514,894   |

OPTION 3 :  
Cafe Christie II



# B. INTERIOR COSTS

|                    |                |              |           |
|--------------------|----------------|--------------|-----------|
| Bar                | \$200 l.f.     | 20 sq.ft.    | \$4,000   |
| Group bar          | \$200 l.f.     | 10 l.f.      | \$2,000   |
| Fireplace          | 2 @            | 1300 each    | \$2,600   |
| Chimney            | 2 (30' by 70') |              | \$20,000  |
| Refrigeration      |                |              |           |
| walk in            |                |              | \$8,000   |
| 2 chest            | @              | \$3,000 each | \$6,000   |
| 1 chest freezer    | @              | \$3,000      | \$3,000   |
| Kitchen and pantry |                |              | \$75,000  |
| Group kitchen      |                |              | \$35,000  |
|                    |                |              | -----     |
|                    |                |              | \$155,600 |

# FIXTURES AND FURNISHINGS

|                                 |               |               |           |
|---------------------------------|---------------|---------------|-----------|
| Foyer, cafe<br>lounge/snack bar | 2640 sq.ft. @ | \$35 sq.ft.   | \$92,400  |
| Group room                      | 640 sq.ft. @  | \$20 sq.ft.   | \$12,800  |
| Deck furniture                  |               |               | \$8,000   |
| Washrooms                       | 2 @           | \$30,000 each | \$60,000  |
|                                 |               |               | -----     |
|                                 |               |               | \$173,200 |

|                |  |  |           |
|----------------|--|--|-----------|
| INTERIOR COSTS |  |  | \$328,800 |
|----------------|--|--|-----------|

|               |             |       |           |
|---------------|-------------|-------|-----------|
| CONTINGENCIES | \$328,800 @ | 15.0% | \$49,320  |
|               |             |       | -----     |
|               |             |       | \$378,120 |

|        |             |       |          |
|--------|-------------|-------|----------|
| DESIGN | \$378,120 @ | 10.0% | \$37,812 |
|        |             |       | -----    |

|                      |  |  |           |
|----------------------|--|--|-----------|
| TOTAL INTERIOR COSTS |  |  | \$415,932 |
|----------------------|--|--|-----------|

|                                                     |  |  |           |
|-----------------------------------------------------|--|--|-----------|
| TOTAL CAPITAL COSTS<br>(excluding site development) |  |  | \$930,826 |
|-----------------------------------------------------|--|--|-----------|

OPTION 3 :  
Cafe Christie II





# DEMAND MODEL

| SEASON   | START  | FINISH | DAYS | WEEKS | WEEKENDS | WEEKDAYS |
|----------|--------|--------|------|-------|----------|----------|
| SUMMER   | 15-May | 15-Sep |      | 123   | 18       | 35       |
|          |        |        |      |       |          | 88       |
| SHOULDER | 15-Sep | 16-Dec |      | 92    | 13       | 26       |
|          | 15-Apr | 15-May |      | 30    | 4        | 9        |
|          |        |        |      | 122   | 17       | 35       |
|          |        |        |      |       |          | 87       |
| WINTER   | 16-Dec | 14-Apr |      | 120   | 17       | 34       |
|          |        |        |      | 365   | 52       | 104      |
|          |        |        |      |       |          | 261      |

OPTION 3 :  
Cafe Christie II





| OCCUPANCY        |           |                       |       |              |               | OCCUPANCY |      |        |       |        |        |
|------------------|-----------|-----------------------|-------|--------------|---------------|-----------|------|--------|-------|--------|--------|
|                  |           | BKFAST                | LUNCH | DINNER       | BRUNCH        |           |      | BKFAST | LUNCH | DINNER | BRUNCH |
| SUMMER           | CAFE      | Monday                | 201   | 201          | 201           | SUMMER    | CAFE | 281    | 281   | 281    | 0      |
|                  |           | Tuesday               | 221   | 201          | 201           |           |      | 309    | 281   | 281    | 0      |
|                  |           | Wednesday             | 221   | 201          | 251           |           |      | 309    | 281   | 351    | 0      |
|                  |           | Thurs                 | 251   | 201          | 401           |           |      | 351    | 281   | 562    | 0      |
|                  |           | Fri                   | 201   | 351          | 501           |           |      | 281    | 492   | 703    | 0      |
|                  |           | Sat                   | 401   | 501          | 501           |           |      | 562    | 703   | 703    | 0      |
|                  |           | Sun                   | 401   |              | 501           |           |      | 562    | 0     | 703    | 843    |
|                  |           |                       |       |              | 601           |           |      | 2657   | 2319  | 3585   | 843    |
| SNACK BAR/LOUNGE | Monday    | 201                   | 201   |              | LOUNGE        | 281       | 281  | 0      | 0     |        |        |
|                  | Tuesday   | 221                   | 201   |              |               | 309       | 281  | 0      | 0     |        |        |
|                  | Wednesday | 221                   | 201   |              |               | 309       | 281  | 0      | 0     |        |        |
|                  | Thurs     | 221                   | 301   | 101          |               | 309       | 422  | 141    | 0     |        |        |
|                  | Fri       | 301                   | 301   | 151          |               | 422       | 422  | 211    | 0     |        |        |
|                  | Sat       | 401                   | 301   | 251          |               | 562       | 422  | 351    | 0     |        |        |
|                  | Sun       | 401                   |       | 101          |               | 562       | 0    | 141    | 0     |        |        |
|                  |           |                       |       |              |               | 2755      | 2109 | 843    | 0     | 5707   |        |
| DECK             | Monday    | 51                    | 51    | 51           | DECK          | 37        | 37   | 37     | 0     |        |        |
|                  | Tuesday   | 51                    | 51    | 51           |               | 37        | 37   | 37     | 0     |        |        |
|                  | Wednesday | 51                    | 51    | 51           |               | 37        | 37   | 37     | 0     |        |        |
|                  | Thurs     | 71                    | 101   | 51           |               | 52        | 74   | 37     | 0     |        |        |
|                  | Fri       | 101                   | 151   | 101          |               | 74        | 111  | 74     | 0     |        |        |
|                  | Sat       | 151                   | 201   | 101          |               | 111       | 148  | 74     | 0     |        |        |
|                  | Sun       | 151                   | 201   | 51           |               | 111       | 148  | 37     | 0     |        |        |
|                  |           |                       |       |              |               | 458       | 590  | 332    | 0     | 1380   |        |
| GROUP ROOM       | Fri       | 301 of available time |       |              | GROUP ROOM    | 5         |      |        |       |        |        |
|                  | Sat       | 401 of available time |       |              |               | 7         |      |        |       |        |        |
|                  | Sun       | 601 of available time |       |              |               | 11        |      |        |       |        |        |
|                  |           |                       |       |              |               | 23        |      |        |       |        |        |
| SHOULDER CAFE    | Fri       |                       |       | 401          | SHOULDER CAFE | 0         | 0    | 558    | 0     |        |        |
|                  | Sat       |                       | 401   | 501          |               | 0         | 558  | 697    | 837   |        |        |
|                  | Sun       |                       |       | 601          |               | 0         | 0    | 837    | 0     |        |        |
|                  |           |                       |       |              |               | 0         | 558  | 2091   | 837   | 3486   |        |
| SNACK BAR/LOUNGE | Fri       |                       |       | 401          | SNACK BAR/L   | 0         | 0    | 558    | 0     |        |        |
|                  | Sat       |                       | 401   | 501          |               | 0         | 558  | 697    | 837   |        |        |
|                  | Sun       |                       |       | 601          |               | 0         | 0    | 837    | 0     |        |        |
|                  |           |                       |       |              |               | 0         | 558  | 2091   | 837   | 3486   |        |
| DECK             | Fri       |                       |       |              | DECK          | 0         | 0    | 0      | 0     |        |        |
|                  | Sat       |                       | 401   | 501          |               | 0         | 418  | 523    | 0     |        |        |
|                  | Sun       |                       |       | 601          |               | 0         | 0    | 627    | 523   |        |        |
|                  |           |                       |       | 501          |               | 0         | 418  | 1150   | 523   | 2091   |        |
| GROUP ROOM       | Fri       | 301 of available time |       |              | GROUP ROOM    | 5         |      |        |       |        |        |
|                  | Sat       | 401 of available time |       |              |               | 7         |      |        |       |        |        |
|                  | Sun       | 601 of available time |       |              |               | 10        |      |        |       |        |        |
|                  |           |                       |       |              |               | 23        |      |        |       |        |        |
| WINTER CAFE      | Fri       |                       |       | 401          | WINTER CAFE   | 0         | 0    | 549    | 0     |        |        |
|                  | Sat       |                       | 401   | 501          |               | 0         | 549  | 686    | 823   |        |        |
|                  | Sun       |                       |       | 601          |               | 0         | 0    | 823    | 0     |        |        |
|                  |           |                       |       |              |               | 0         | 549  | 2057   | 823   | 3429   |        |
| SNACK BAR/LOUNGE | Fri       |                       |       | 401          | SNACK BAR/L   | 0         | 0    | 549    | 0     |        |        |
|                  | Sat       |                       | 401   | 501          |               | 0         | 549  | 686    | 686   |        |        |
|                  | Sun       |                       |       | 601          |               | 0         | 0    | 823    | 0     |        |        |
|                  |           |                       |       |              |               | 0         | 549  | 2057   | 686   | 3291   |        |
| GROUP ROOM       | Fri       | 301 of available time |       |              | GROUP ROOM    | 5         |      |        |       |        |        |
|                  | Sat       | 401 of available time |       |              |               | 7         |      |        |       |        |        |
|                  | Sun       | 601 of available time |       |              |               | 10        |      |        |       |        |        |
|                  |           |                       |       |              |               | 22        |      |        |       |        |        |
| TYPE OF FACILITY |           | AVE. EXPENDITURE      |       | NO. OF SEATS |               |           |      |        |       |        |        |
| CAFE             |           | \$5.75 /PERSON        |       | 80           |               |           |      |        |       |        |        |
| LOUNGE           |           | \$6.60 /PERSON        |       | 80           |               |           |      |        |       |        |        |
| DECK             |           | \$5.75 /PERSON        |       | 60           |               |           |      |        |       |        |        |
| GROUP ROOM       |           | \$80.00 /OCCASION     |       | 60           |               |           |      |        |       |        |        |

OPTION 3 :  
Cafe Christie II



| INCOME STATEMENT         |                           |             | NO. OF PERSONS       | RATE         | 1         | 2         | 3         | 4         | 5         |
|--------------------------|---------------------------|-------------|----------------------|--------------|-----------|-----------|-----------|-----------|-----------|
| -----                    |                           |             |                      |              |           |           |           |           |           |
| SALES                    |                           |             |                      |              |           |           |           |           |           |
| -----                    |                           |             |                      |              |           |           |           |           |           |
| Fd & Bev                 | Summer                    | Cafe        | 9404                 | \$5.75/pers  | \$54,073  | \$56,777  | \$59,615  | \$62,596  | \$65,726  |
|                          |                           | Lounge/Snac | 5707                 | \$6.60/pers  | \$37,666  | \$39,550  | \$41,527  | \$43,603  | \$45,784  |
|                          |                           | Deck        | 1380                 | \$5.75/pers  | \$7,935   | \$8,332   | \$8,748   | \$9,186   | \$9,645   |
|                          |                           | Group room  | 23                   | \$80.00/pers | \$1,840   | \$1,932   | \$2,029   | \$2,130   | \$2,237   |
|                          | Shoulder                  | Cafe        | 3486                 | \$5.75/pers  | \$20,045  | \$21,047  | \$22,099  | \$23,204  | \$24,364  |
|                          |                           | Lounge/Snac | 3486                 | \$6.60/pers  | \$23,008  | \$24,158  | \$25,366  | \$26,634  | \$27,966  |
|                          |                           | Deck        | 2091                 | \$5.75/pers  | \$12,023  | \$12,624  | \$13,256  | \$13,918  | \$14,614  |
|                          |                           | Group room  | 23                   | \$80.00/pers | \$1,840   | \$1,932   | \$2,029   | \$2,130   | \$2,237   |
|                          | Winter                    | Cafe        | 3429                 | \$5.75/pers  | \$19,717  | \$20,703  | \$21,738  | \$22,825  | \$23,966  |
|                          |                           | Lounge/Snac | 3291                 | \$6.60/pers  | \$21,721  | \$22,807  | \$23,947  | \$25,144  | \$26,402  |
|                          |                           | Group room  | 22                   | \$80.00/pers | \$1,760   | \$1,848   | \$1,940   | \$2,037   | \$2,139   |
|                          | -----                     |             |                      |              |           |           |           |           |           |
| TOTAL                    |                           |             | 32342                |              | \$201,627 | \$211,708 | \$222,294 | \$233,408 | \$245,079 |
| -----                    |                           |             |                      |              |           |           |           |           |           |
| EXPENSES                 |                           |             | RATE                 | BASIS        |           |           |           |           |           |
| -----                    |                           |             |                      |              |           |           |           |           |           |
| Cost of Goods Sold       |                           |             |                      |              |           |           |           |           |           |
|                          | Food                      |             | 32.7% tot food sales |              | \$60,156  | \$63,164  | \$66,322  | \$69,638  | \$73,120  |
|                          | Beverages                 |             | 40.8% tot bev sales  |              | \$7,206   | \$7,567   | \$7,945   | \$8,342   | \$8,759   |
|                          | Payroll and benefits      |             | 30.0% tot sales      |              | \$60,488  | \$63,512  | \$66,688  | \$70,023  | \$73,524  |
|                          | Direct Operating Expenses |             | 5.6% tot sales       |              | \$11,291  | \$11,856  | \$12,448  | \$13,071  | \$13,724  |
|                          | Music and Entertainment   |             | 1.9% tot sales       |              | \$3,833   | \$4,025   | \$4,226   | \$4,437   | \$4,659   |
|                          | Advert & Promo            |             | 2.5% tot sales       |              | \$5,044   | \$5,296   | \$5,561   | \$5,839   | \$6,131   |
|                          | Utilities                 |             | 2.8% tot sales       |              | \$5,649   | \$5,931   | \$6,228   | \$6,539   | \$6,866   |
|                          | Admin & General           |             | 1.7% tot sales       |              | \$3,430   | \$3,601   | \$3,781   | \$3,970   | \$4,169   |
|                          | Repairs & Maint           |             | 2.3% tot sales       |              | \$4,640   | \$4,872   | \$5,116   | \$5,372   | \$5,640   |
| -----                    |                           |             |                      |              |           |           |           |           |           |
| TOTAL EXPENSES           |                           |             |                      |              | \$161,737 | \$169,824 | \$178,315 | \$187,231 | \$196,593 |
| -----                    |                           |             |                      |              |           |           |           |           |           |
| OPERATING PROFIT         |                           |             |                      |              | \$39,890  | \$41,884  | \$43,978  | \$46,177  | \$48,486  |
| -----                    |                           |             |                      |              |           |           |           |           |           |
| PROFIT MARGIN            |                           |             |                      |              | 19.8%     | 19.8%     | 19.8%     | 19.8%     | 19.8%     |
| =====                    |                           |             |                      |              |           |           |           |           |           |
| food as % of total sales |                           |             |                      |              | 0.9124    |           |           |           |           |
|                          |                           |             |                      |              | \$201,744 | \$211,831 | \$222,423 | \$233,544 | \$245,221 |

OPTION 3 :  
Cafe Christie II





#### 14. PRELIMINARY CAPITAL COST ESTIMATES

Preliminary capital cost estimates for the key Master Plan components are based on the 1987 market value of construction. At the time of site design, tendering and construction, revisions to costs will be required. These estimates are approximate and will vary depending on the market value of construction.

TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES

| <u>Project</u>                 | <u>Description</u>                                                                                                                                   | <u>Size</u>                          | <u>Unit Cost</u>                       | <u>Preliminary Capital Cost</u> |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------|---------------------------------|
| 1. Roads                       |                                                                                                                                                      |                                      |                                        |                                 |
| a) site entrance               | - new site entrance<br>road to beach<br>pavilion<br>- drop off at pavilion<br>- paved, two-lane<br>- gravel shoulders<br>- lined with shade<br>trees | 930 m<br><br><br><br><br>92          | \$300/m<br><br><br><br>\$250           | \$279,000<br><br><br>\$ 23,000  |
| b) road to<br>Christie Lodge   | - new road<br>- paved surface<br>- two-lane<br>- timber retaining<br>walls                                                                           | 1500 m<br><br><br>140 lin m<br>x 2 m | \$300/m<br><br><br>\$60/m <sup>2</sup> | \$450,000<br><br>\$ 16,800      |
| c) road to central<br>workshop | - two-lane<br>- paved                                                                                                                                | 250 m                                | \$300/m                                | \$ 75,000                       |

# TABLE IV ESTIMATED CAPITAL COST ESTIMATES

Estimates of capital costs were obtained for the two largest size buildings and for the two smallest buildings. The estimates are based on the 1960 current prices of materials and labor. At the time of the estimates, the buildings and construction were not yet started. These estimates are preliminary and will vary depending on the actual costs of construction.

TABLE IV  
ESTIMATED CAPITAL COST ESTIMATES

| Building | Unit       | Size  | Description                                                                                                                                            | Estimated  |
|----------|------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 1        | Walls      |       |                                                                                                                                                        |            |
| a)       | Side wall  | 210 m | - new side wall<br>- road to beach<br>- division<br>- new side of pavilion<br>- paved, two-lane<br>- gravel shoulders<br>- lined with shade<br>- fence | 12,100,000 |
| b)       | Front wall | 150 m | - new wall<br>- paved surface<br>- two-lane<br>- street retaining<br>- walls                                                                           | 2,750,000  |
| c)       | Back wall  | 150 m | - new wall<br>- paved surface<br>- two-lane<br>- street retaining<br>- walls                                                                           | 2,750,000  |
| d)       | Front wall | 150 m | - new wall<br>- paved surface<br>- two-lane<br>- street retaining<br>- walls                                                                           | 2,750,000  |
| e)       | Back wall  | 150 m | - new wall<br>- paved surface<br>- two-lane<br>- street retaining<br>- walls                                                                           | 2,750,000  |



TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| Component                                      | Description                                                                                                                                                 | Size                                                        | Unit Cost                                                                                   | Preliminary Capital Cost                                             |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| d) road near boat house                        | - paved<br>- two-lane                                                                                                                                       | 1000 m                                                      | \$300/m                                                                                     | \$300,000                                                            |
| e) post and cable fencing along all site roads | - post 1 m high every 5 m                                                                                                                                   | 7500 m                                                      | \$ 8/m                                                                                      | \$ 60,000                                                            |
| 1. SUB-TOTAL                                   |                                                                                                                                                             |                                                             |                                                                                             | \$1,203,800                                                          |
| 2. Entrance                                    |                                                                                                                                                             |                                                             |                                                                                             |                                                                      |
| a) kiosk and site map                          | - stone columns, timber roof<br>- unmanned                                                                                                                  |                                                             | lump sum                                                                                    | \$15,000                                                             |
| b) reorganize parking lot                      | - gravel surface<br>- illuminated<br>- landscape treatment                                                                                                  | 12 spaces                                                   | \$500/space                                                                                 | \$ 6,000                                                             |
| 2. SUB-TOTAL                                   |                                                                                                                                                             |                                                             |                                                                                             | \$21,000                                                             |
| 3. Beach Area                                  |                                                                                                                                                             |                                                             |                                                                                             |                                                                      |
| a) renovate existing beach concession          | - add skylights<br>- paved entrance plaza<br>- water feature<br>- shade trees<br>- other landscape treatment (e.g. vines, trellis, shrubs)<br>- timber deck | 4<br>250 m <sup>2</sup><br><br>25<br><br>150 m <sup>2</sup> | 10,000 each<br>\$68/m <sup>2</sup><br>lump sum<br>\$250<br>lump sum<br>\$110/m <sup>2</sup> | \$40,000<br>\$17,000<br>\$30,000<br>\$ 6,250<br>\$ 3,000<br>\$16,500 |

**TABLE 17**  
**ESTIMATED CAPITAL COST ESTIMATES**  
**(DOLLARS)**

| Category               | Item            | Unit  | Quantity | Unit Cost | Total Cost |
|------------------------|-----------------|-------|----------|-----------|------------|
| 1. Plant and equipment | General purpose | sq ft | 1000     | \$10.00   | \$10,000   |
|                        | Special purpose | sq ft | 1000     | \$15.00   | \$15,000   |
| 2. Building            | General purpose | sq ft | 1000     | \$10.00   | \$10,000   |
|                        | Special purpose | sq ft | 1000     | \$15.00   | \$15,000   |
| Sub-total              |                 |       |          |           | \$50,000   |
| 3. Land                | General purpose | acres | 10       | \$10.00   | \$100,000  |
|                        | Special purpose | acres | 10       | \$15.00   | \$150,000  |
| 4. Other               | General purpose | sq ft | 1000     | \$10.00   | \$10,000   |
|                        | Special purpose | sq ft | 1000     | \$15.00   | \$15,000   |
| Sub-total              |                 |       |          |           | \$30,000   |
| Grand total            |                 |       |          |           | \$180,000  |

TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| Component                 | Description                           | Size                                         | Unit Cost            | Preliminary Capital Cost   |
|---------------------------|---------------------------------------|----------------------------------------------|----------------------|----------------------------|
| b) children's splash pool | - concrete, shallow sloping pool      | 750 m <sup>2</sup><br>x 60 cm                | lump sum             | \$300,000                  |
|                           | - slides, toys, jets                  |                                              | lump sum             | \$50,000                   |
|                           | - tented awning                       | 60 m x 5 m                                   | lump sum             | \$40,000                   |
|                           | - boardwalk                           | 60 m x 5 m                                   | \$150/m <sup>2</sup> | \$45,000                   |
| c) viewing terrace        | - timber deck                         | 225 m <sup>2</sup>                           | \$150/m <sup>2</sup> | \$33,750                   |
|                           | - boardwalk                           | 25 m x 2 m                                   | \$150/m <sup>2</sup> | \$ 7,500                   |
| d) beach boardwalk        |                                       | 150 m x 3 m                                  | \$150/m <sup>2</sup> | \$67,500                   |
| e) gazebo                 | - open air wood structure             | 28 m <sup>2</sup>                            | lump sum             | \$15,000                   |
| f) pedestrian bridge      | - timber suspension bridge            | 40 m x 3 m                                   | lump sum             | \$120,000                  |
|                           | - ramp on north side                  | 25 m x 3 m                                   | \$150/m <sup>2</sup> | \$11,250                   |
| 3. SUB-TOTAL              |                                       |                                              |                      | \$802,750                  |
| 4. Christie Lodge         |                                       |                                              |                      |                            |
| a) building               | - stone and wood building             | 1-567 m <sup>2</sup><br>2-202 m <sup>2</sup> |                      | \$1.2 million<br>\$500,000 |
|                           | - snack bar/cafe                      | 3-502 m <sup>2</sup>                         |                      | \$930,000                  |
|                           | - meeting rooms                       |                                              |                      |                            |
|                           | - interpretive/orientation facilities |                                              |                      |                            |





TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| Component             | Description                                        | Size                     | Unit Cost            | Preliminary Capital Cost |
|-----------------------|----------------------------------------------------|--------------------------|----------------------|--------------------------|
| b) terrace            | - timber viewing terrace                           | 380 m <sup>2</sup>       | \$150/m <sup>2</sup> | \$57,000                 |
|                       | - 1 large gazebo                                   |                          | lump sum             | \$25,000                 |
| c) walkways and steps | - timber walkway and steps                         | 160 m x 2 m<br>75± steps | lump sum             | \$60,000                 |
|                       | - gazebo                                           |                          |                      | \$15,000                 |
| d) snowslides         | - elevated timber viewing terrace                  | 160 m <sup>2</sup>       | lump sum             | \$50,000                 |
|                       | - selective tree removal/regrading                 | 1800 m <sup>2</sup>      | lump sum             | \$10,000                 |
| e) site clearing      | - selective tree removal/regrading                 | 8000 m <sup>2</sup>      | lump sum             | \$30,000                 |
| f) services           | - water supply                                     | 1 well                   | lump sum             | \$24,000                 |
|                       | . well construction and pump test                  | (2 wells)                | lump sum             | (\$37,000)               |
|                       | . well screen                                      |                          |                      |                          |
|                       | . well pumps                                       |                          |                      |                          |
|                       | . water treatment                                  |                          |                      |                          |
|                       | . pressure tanks, storage tank                     |                          |                      |                          |
|                       | - septic tank, distribution tank and disposal beds |                          | lump sum             | \$110,000                |
|                       | . pumping chamber                                  |                          |                      |                          |
|                       | . 100 Ø forcemain                                  |                          |                      |                          |
|                       | . distribution boxes                               |                          |                      |                          |
|                       | . 100 Ø perforated tile pipes                      |                          |                      |                          |





TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| Component     | Description                                   | Size              | Unit Cost            | Preliminary Capital Cost |
|---------------|-----------------------------------------------|-------------------|----------------------|--------------------------|
|               | . 20 mm crushed gravel tile bed               |                   |                      |                          |
|               | - hydro                                       |                   | lump sum             | \$24,000                 |
|               | . hydro posts and cables                      |                   |                      |                          |
|               | . transformer boxes provided by Ontario Hydro |                   |                      |                          |
|               | - gas                                         |                   | lump sum             | \$20,000                 |
|               | . 100 Ø service line                          |                   |                      |                          |
|               | . acquisition of gasline easement             |                   |                      |                          |
|               | - Bell                                        |                   | lump sum             | \$ 1,000                 |
|               | . Bell line                                   |                   |                      |                          |
| g) parking    | - gravel surface                              | 145 spaces        | \$1000/sp            | \$145,000                |
|               | - illuminated                                 |                   |                      |                          |
| h) landscape  | - lined pond                                  | 30 m x 30 m       | lump sum             | \$25,000                 |
|               | - timber edge                                 | 30 m              | lump sum             | \$20,000                 |
|               | - ledgerock                                   | 50 m <sup>2</sup> | lump sum             | \$25,000                 |
|               | - removable pedestrian bridge                 | 5 m x 2 m         | lump sum             | \$25,000                 |
|               | - timber walkway                              | 70 m x 3 m        | \$150/m <sup>2</sup> | \$31,500                 |
|               | - 2 gazebos                                   |                   | \$15,000 each        | \$30,000                 |
|               | - lawn                                        | 80 m <sup>2</sup> | \$20/m <sup>2</sup>  | \$ 1,600                 |
|               | - shrub planting                              |                   |                      | \$ 5,000                 |
| 4. SUB-TOTAL  |                                               |                   |                      | \$1,234,100              |
| With Building |                                               |                   |                      |                          |
| Option 2      |                                               |                   |                      |                          |



TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| Component                                  | Description                                              | Size                | Unit Cost             | Preliminary Capital Cost |
|--------------------------------------------|----------------------------------------------------------|---------------------|-----------------------|--------------------------|
| 5. Workshop/Yard                           |                                                          |                     |                       |                          |
| a) administration building                 | - wood and stone construction                            | 264 m <sup>2</sup>  | \$1075/m <sup>2</sup> | \$283,800                |
|                                            | - paved entrance plaza                                   | 235 m <sup>2</sup>  | \$60/m <sup>2</sup>   | \$14,100                 |
| b) workshop/warehouse                      | - prefabricated metal construction with barnboard siding | 836 m <sup>2</sup>  | \$450/m <sup>2</sup>  | \$376,200                |
| c) roofed drive shed and equipment storage |                                                          | 348 m <sup>2</sup>  | \$325/m <sup>2</sup>  | \$113,100                |
| d) equipment washing                       |                                                          | 111 m <sup>2</sup>  | \$810/m <sup>2</sup>  | \$89,910                 |
| e) works yard                              | - fenced, gravel yard                                    | 3700 m <sup>2</sup> | \$15/m <sup>2</sup>   | \$55,500                 |
| f) buried gasoline                         |                                                          | 3000 gal.           |                       | \$13,750                 |
| buried diesel                              |                                                          | 1000 gal.           |                       | \$11,250                 |
| buried waste oil                           |                                                          | 1000 gal.           |                       | \$11,250                 |
| g) liquid calcium chloride storage         |                                                          | 10,000 gal.         |                       | \$25,000                 |





TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| Component                          | Description                                                              | Size                                             | Unit Cost                                    | Preliminary Capital Cost         |
|------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------------|----------------------------------|
| h) parking lot                     | - gravel<br>- illuminated                                                | 46 spaces                                        | \$1000/sp                                    | \$46,000                         |
| i) landscape treatment             | - shade trees<br>- ground cover & shrubs                                 | 265                                              | \$250 each<br>Lump Sum                       | \$66,250<br>\$10,000             |
| j) gravel circulation area         |                                                                          | 7200 m <sup>2</sup>                              | \$10/m <sup>2</sup>                          | \$72,000                         |
| 5. SUB-TOTAL                       |                                                                          |                                                  |                                              | \$1,188,110                      |
| 6. Trails                          |                                                                          |                                                  |                                              |                                  |
| a) horseback riding centre         | - roofed shelter<br>- outdoor fenced enclosure<br>- an attendant's kiosk | 100 m <sup>2</sup><br>250 m<br>10 m <sup>2</sup> | \$325/m <sup>2</sup><br>Lump Sum<br>Lump Sum | \$32,500<br>\$ 2,000<br>\$10,000 |
| b) horseback riding trails         | - cleared trails                                                         | 5 km                                             | \$5000/km                                    | \$25,000                         |
| c) hiking/cross country ski trails | - cleared trails                                                         | 7 km                                             | \$5000/km                                    | \$35,000                         |
| 6. SUB-TOTAL                       |                                                                          |                                                  |                                              | \$104,500                        |

TABLE IV  
ESTIMATED CAPITAL COST ESTIMATES  
(Continued)

| Item                 | Quantity | Unit  | Price  | Total    |
|----------------------|----------|-------|--------|----------|
| 1. General site      | 100      | sq ft | \$1.00 | \$100.00 |
| 2. Foundation        | 100      | sq ft | \$1.00 | \$100.00 |
| 3. Structural steel  | 100      | sq ft | \$1.00 | \$100.00 |
| 4. Roofing           | 100      | sq ft | \$1.00 | \$100.00 |
| 5. Siding            | 100      | sq ft | \$1.00 | \$100.00 |
| 6. Windows           | 100      | sq ft | \$1.00 | \$100.00 |
| 7. Doors             | 100      | sq ft | \$1.00 | \$100.00 |
| 8. Electrical        | 100      | sq ft | \$1.00 | \$100.00 |
| 9. Plumbing          | 100      | sq ft | \$1.00 | \$100.00 |
| 10. Heating          | 100      | sq ft | \$1.00 | \$100.00 |
| 11. Air conditioning | 100      | sq ft | \$1.00 | \$100.00 |
| 12. Miscellaneous    | 100      | sq ft | \$1.00 | \$100.00 |
| 13. Total            | 100      | sq ft | \$1.00 | \$100.00 |



TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| <u>Component</u> | <u>Description</u>       | <u>Size</u>                                                              | <u>Unit Cost</u>       | <u>Preliminary Capital Cost</u> |
|------------------|--------------------------|--------------------------------------------------------------------------|------------------------|---------------------------------|
| 7.               | Wildlife Management Area |                                                                          |                        |                                 |
| a)               | group campsite           | - unserviced<br>- privies<br>- picnic tables<br>- fire pit               | lump sum               | \$ 5,000                        |
| b)               | parking lot              | - gravel                                                                 | 60 cars                | \$300/sp<br>\$18,000            |
| c)               | kiosk and site map       |                                                                          |                        | \$15,000                        |
| d)               | weir                     | - 3 m wide to allow for pedestrian crossing<br>- streambank improvements | 170 m long<br>3 m wide | lump sum<br>\$150,000           |
|                  |                          |                                                                          | 7. SUB-TOTAL           | \$188,000                       |
| 8.               | Other                    |                                                                          |                        |                                 |
| a)               | sports field             | - baseball diamond                                                       |                        | \$10,000                        |
| b)               | new picnic pavilion      | - with washrooms                                                         | lump sum               | \$100,000                       |



TABLE 17  
PRELIMINARY CAPITAL COST ESTIMATES  
(continued)

| Component         | Description                      | Size       | Unit Cost | Preliminary Capital Cost |
|-------------------|----------------------------------|------------|-----------|--------------------------|
| c) parking lots   | - near sports field              | 40 spaces  | \$1000/sp | \$40,000                 |
|                   | - expand existing lot            | 210 spaces | \$1000/sp | \$210,000                |
|                   | - gravel surface and illuminated |            |           |                          |
| d) lookout towers | - 2 timber viewing structures    |            | \$35,000  | \$70,000                 |

8. SUB-TOTAL \$ 430,000

1-8 SUB TOTAL \$5,172,260

15% CONTINGENCIES 775,000

SUB TOTAL 5,947,260

10% PROFESSIONAL FEES 595,000

GRAND TOTAL \$6,542,260



TABLE 17  
 MAINTENANCE CAPITAL COST ESTIMATES  
 (continued)

| Location         | Description           | Size       | Unit Cost | Estimated Cost |
|------------------|-----------------------|------------|-----------|----------------|
| 3) Parking lot   | - new concrete finish | 50 spaces  | \$100/sq  | \$5,000        |
|                  | - gravel surface for  | 100 spaces | \$100/sq  | \$10,000       |
|                  | - gravel surface for  |            |           |                |
|                  | - drainage            |            |           |                |
| 4) Back of house | - 1 room viewing      |            | \$15,000  | \$15,000       |
|                  | - elevator            |            |           |                |

5. SUB-TOTAL \$ 450,000

1-8 SUB TOTAL \$2,115,000

1% CONTINGENCIES 775,000

SUB TOTAL 2,890,000

10% PROFESSIONAL FEES 289,000

GRAND TOTAL \$3,179,000

## 15. IMPLEMENTATION SCHEDULE

An implementation schedule for site development was established to:

- o give priority to key development components;
- o provide infrastructure in order of a logical development sequence;
- o spread capital cost over five years.

Table 18 summarizes the suggested project phasing for the key development components over a five year period.

# INVESTMENT SCHEDULE

An investment schedule for the development was developed in 1960.

The priority in the development was to

provide facilities in order of a logical development

of the capital cost over the years.

Table 1 summarizes the suggested project timing for the key investment components over a five year period.



TABLE 18  
IMPLEMENTATION SCHEDULE

| <u>Project</u>                                                                  | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> | <u>Capital Cost</u> |
|---------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------------|
| 1. Roads                                                                        |               |               |               |               |               |                     |
| ° site entrance                                                                 | 0             |               |               |               |               | \$ 302,000          |
| ° road to Christie Lodge                                                        |               |               |               | 0             |               | 466,800             |
| ° road to central workshop                                                      | 0             |               |               |               |               | 75,000              |
| ° road near boat house                                                          |               |               | 0             |               |               | 300,000             |
| ° post and cable                                                                | 0             |               | 0             | 0             |               | 60,000              |
| 2. Entrance                                                                     |               |               |               |               |               |                     |
| ° kiosk & site map                                                              | 0             |               |               |               |               | 15,000              |
| ° reorganize parking lot                                                        | 0             |               |               |               |               | 6,000               |
| 3. Beach Complex                                                                |               |               |               |               |               |                     |
| ° renovate beach concession                                                     | 0             | 0             |               |               |               | 112,750             |
| ° children's splash pool                                                        | 0             | 0             |               |               |               | 435,000             |
| ° viewing terrace                                                               |               |               | 0             |               |               | 41,250              |
| ° beach boardwalk                                                               |               |               | 0             |               |               | 67,500              |
| ° gazebo                                                                        |               |               | 0             |               |               | 15,000              |
| ° pedestrian bridge                                                             |               |               |               |               | 0             | 131,250             |
| 4. Christie Lodge                                                               |               |               |               |               |               |                     |
| ° clearing, services, parking, building (option 2), terrace, walkways and steps |               |               | 0             | 0             | 0             | 1,011,000           |
| ° landscape                                                                     |               |               |               |               | 0             | 163,100             |
| ° snow slides                                                                   |               | 15-2          |               |               | 0             | 60,000              |



TABLE 18  
IMPLEMENTATION SCHEDULE  
(continued)

| <u>Project</u>                      | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> | <u>Capital Cost</u> |
|-------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------------|
| 5. Workshop/Yard                    |               |               | 0             | 0             | 0             | \$1,188,100         |
| 6. Trails                           |               |               |               |               |               |                     |
| ° horseback riding centre           |               | 0             |               |               |               | 44,500              |
| ° riding trails                     |               | 0             | 0             |               |               | 25,000              |
| ° hiking/cross-country ski trails   | 0             | 0             | 0             | 0             | 0             | 35,000              |
| 7. Wildlife Management Area         |               |               |               |               |               |                     |
| ° camp site, parking, kiosk         |               | 0             |               |               |               | 38,000              |
| ° weir                              |               |               | 0             |               |               | 150,000             |
| 8. Sportsfield                      |               | 0             |               |               |               | 10,000              |
| 9. Picnic Pavilion (with washrooms) |               |               |               | 0             |               | 100,000             |
| 10. Parking Lots                    |               |               |               |               |               |                     |
| ° near new sportsfield              |               |               |               | 0             |               | 40,000              |
| ° expand existing lot near beach    | 0             |               |               |               |               | 210,000             |





TABLE 18  
IMPLEMENTATION SCHEDULE  
(continued)

| <u>Project</u>                      | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> | <u>Year 4</u> | <u>Year 5</u> | <u>Capital Cost</u>       |
|-------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------------------|
| 11. Lookout Towers                  |               |               | 0             |               | 0             | \$ 70,000                 |
| TOTAL COST PER YEAR                 | \$1,273,459   | 799,959       | 1,418,744     | 963,984       | 716,114       | \$5,172,260               |
| CONTINGENCIES AND PROFESSIONAL FEES |               |               |               |               |               | <u>\$1,370,000</u>        |
| TOTAL                               |               |               |               |               |               | <u><u>\$6,542,260</u></u> |







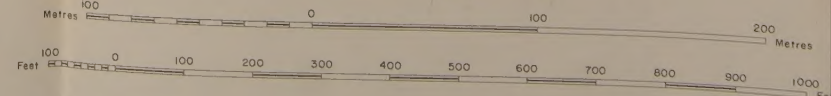
legend

--- PROPERTY BOUNDARY





scale 1:2000

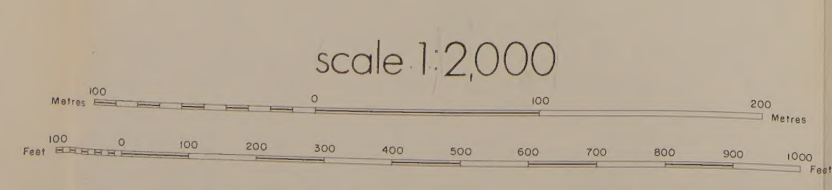


COMPILATION NOTE:  
This map was compiled from April 1977 1/20000 aerial photography,  
culturally up-dated using spring 1984 1/20000 aerial photography.  
(Aerial photography courtesy of the Regional Municipality of  
Hamilton-Wentworth.)

Contour accuracy on unobscured ground  $\pm 0.6$  M.

| LEGEND               |  |
|----------------------|--|
| BUILDING             |  |
| BRIDGE               |  |
| ROAD: Paved, Unpaved |  |
| TRAIL                |  |
| VEGETATION, TREE     |  |
| CULVERT              |  |
| SHORELINE            |  |
| DITCH                |  |
| SWAMP                |  |
| CONTAINER, BARGE     |  |





scale 1:2,000

COMPILATION NOTE:  
This map was compiled from April 1977 1/20000 aerial photography,  
culturally up-dated using spring 1984 1/20000 aerial photography.  
(Aerial photography courtesy of the Regional Municipality of  
Hamilton-Wentworth)

Contour accuracy on unobscured ground  $\pm 0.6$  M.

| LEGEND               |               |
|----------------------|---------------|
| BUILDING             | CULVERT       |
| BRIDGE               | SHORELINE     |
| ROAD: Paved, Unpaved | approximate   |
| TRAIL                | DITCH         |
| VEGETATION, TREE     | SWAMP         |
| POLE                 | CONTOUR index |







HANDICAPPED FISHING POND  
WITH BOARDWALK DECK

LOOKOUT

(D)

(S)





